

ALLEYGATOR

With Zero Arm Maintenance Manual

labrie | DRIVE EXCELLENCE

www.labriegroup.com



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NOTE: Manual subject to change without notice.

February 2021

CAPSCREW MARKING AND TORQUE VALUES

Usage	Much Used	Used at Times	Used at Times
Capscrew Diameter & Minimum Tensile Strength PSI	To 3/4 - 120,000 To 1 - 115,000	To 5/8 - 140,000 To 3/4 - 133,000	150,000
Quality of Material	Min. Commercial	Med. Commercial	Best Commercial
SAE Grade Number	5	6 or 7	8
CAPSCREW HEAD MARKINGS Manufacturers marks may vary. These are all SAE Grade 5 (3-line.) 			
Capscrew Body Size (Inches) - (Thread)	Torque Ft-Lb (kg m)	Torque Ft-Lb (kg m)	Torque Ft-Lb (kg m)
1/4 - 20	8 (1.11)	10 (1.38)	12 (1.66)
- 28	10 (1.38)		14 (1.94)
5/16 - 18	17 (2.35)	19 (2.63)	24 (3.32)
- 24	19 (2.63)		27 (3.73)
3/8 - 16	31 (4.29)	34 (4.70)	44 (6.09)
- 24	35 (4.84)		49 (6.78)
7/16 - 14	49 (6.78)	55 (7.61)	70 (9.68)
- 20	55 (7.61)		78 (10.79)
1/2 - 13	75 (10.37)	85 (11.76)	105 (14.52)
- 20	85 (11.76)		120 (16.60)
9/16 - 12	110 (15.21)	120 (16.60)	155 (21.44)
- 18	120 (16.60)		170 (23.51)
5/8 - 11	150 (20.75)	167 (23.10)	210 (29.04)
- 18	170 (23.51)		240 (33.19)
3/4 - 10	270 (37.34)	280 (38.72)	375 (51.86)
- 16	295 (40.80)		420 (58.09)
7/8 - 9	395 (54.63)	440 (60.85)	605 (83.67)
- 14	435 (60.16)		675 (93.35)
1 - 8	590 (81.60)	660 (91.28)	910 (125.85)
- 14	660 (91.28)		990 (136.92)

NOTES:

1. *Always use the torque values listed above when specific torque values are not available.*
2. *The above is based on use of clean, dry threads.*
3. *Reduce torque by 10% when engine oil is used as a lubricant.*
4. *Reduce torque by 20% if new plated capscrews are used.*
5. *General Formula for calculating Torques is as follows: Torque in Inch Lbs. = .2 x Nominal Diameter of Screw x Loads in Lbs., where Load = 80% of Yield Strength, expressed in Lbs., not pounds per square inch.*

Table of Contents

1

Introduction

About this Manual

This manual is designed to help qualified maintenance personnel repair, service and maintain the ALLEY-GATOR™. It outlines maintenance procedures for body and packer components.

It is imperative that you carefully review this manual prior to performing any maintenance on your ALLEY-GATOR™ Automated Side Loader.

Topics Not Included in This Manual

Maintenance of the chassis

This is dealt with in the chassis manufacturer's service manual.

Cameras and backing-accident prevention systems

For these options, refer to the appropriate manufacturer's service manual.

Operating the ALLEY-GATOR™

For procedures related to the operation of the ALLEY-GATOR™, please refer to the *ALLEY-GATOR™ Operator's Manual*. (A copy of this manual is provided with the truck.)

Parts and assemblies

For parts and assemblies that make up the ALLEY-GATOR™, and for their respective part number for ordering purposes, please refer to the *ALLEY-GATOR™ Parts Manual*.

About the Illustrations in this Manual

Because Labrie Enviroquip Group is constantly updating its products, illustrations used in this manual may differ from those of the actual product and accessories, depending on the model or options that come with your vehicle.

Schematics

For schematics related to body parts, refer to the *ALLEY-GATOR™ Parts Manual*;

For electrical schematics, refer to the schematics provided with your ALLEY-GATOR™ unit;

As for pneumatic and hydraulic schematics for your ALLEY-GATOR™ unit, copies are available from Labrie*Plus* Service Department.

NOTE: **A number of system schematics are included in this manual.**

Warranty Registration Form

Do not forget to complete the owner registration form and to send it to Labrie Enviroquip Group. Make sure to fill out the in-service date. This date will be used as the start date of the warranty period. If the in-service date is not indicated, the warranty period will start 30 days after the delivery date.

Introducing the ALLEY-GATOR™

The ALLEY-GATOR™ is a side-loading refuse truck to be operated by only one operator. It is designed primarily for the automatic collection of garbage carts with the use of a joystick-controlled lifting arm.

Product Overview

The ALLEY-GATOR™ is ideal for organics collection. To lift waste into the hopper, it uses a zero radius J-track arm that is perfect for alleys and tight spots. This arm has a lift capacity of 1000 lbs and an arm reach of 144".

The ALLEY-GATOR™ is equipped with a self-cleaning pendulum packer (measuring 63" width by 14" height) which pushes refuse into the waste body and eliminates trash build-up. The packer compaction ratio is 700 lbs/yd^3.

To power its hydraulic system, the ALLEY-GATOR™ uses a dual vane pump with a maximum operating pressure of 2700 PSI. The body and arm sections of the pump both have a capacity of 18 GPM @ 700 RPM. The oil tank has a capacity of 55 gallons.

The ALLEY-GATOR™ is primarily designed to be operated by only one worker. If, however, the end-user chooses to operate the arm-equipped ALLEY-GATOR™ with more than one worker, they shall advise Labrie Enviroquip Group of this situation. Labrie will then determine and supply, at the customer's expense, the safety items that are required in such a case.

For more information on this, please contact Labrie*Plus* (see page 8).

Danger!

Failure to contact Labrie Enviroquip Group to report a situation where a unit is operated by more than one worker at a time may result in unit and/or property damage, personal injury or even death.

Brief Description of Some Hydraulic/Electrical Components

Valve Bank

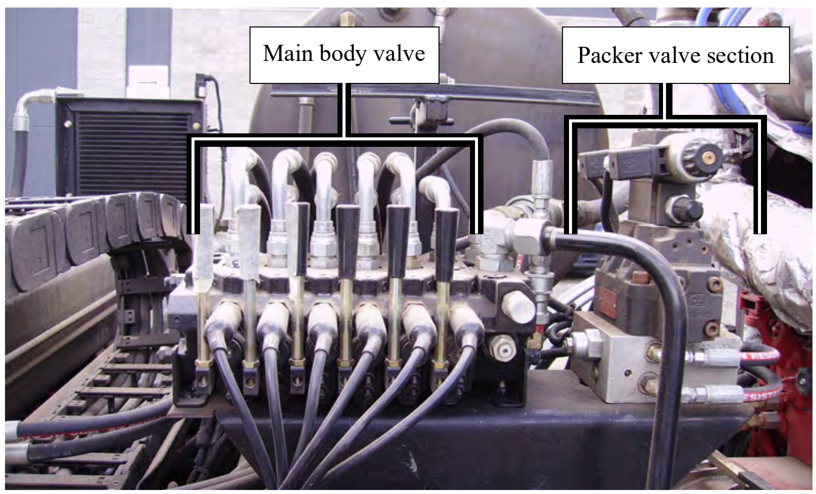
The hydraulic valve bank is controlled by proportional solenoids.

The main body valve (see Figure 1-1) is equipped with proportional solenoids. These solenoids are activated through the control module.

The packer valve section (see Figure 1-1) is fitted with solenoids that are electrically activated by two proximity switches mounted to the body via the control module. These solenoids are 12 volt, on/off.

NOTE: When facing the main body valve, the packer valve section is located on the right side of the body valve (see Figure 1-1).

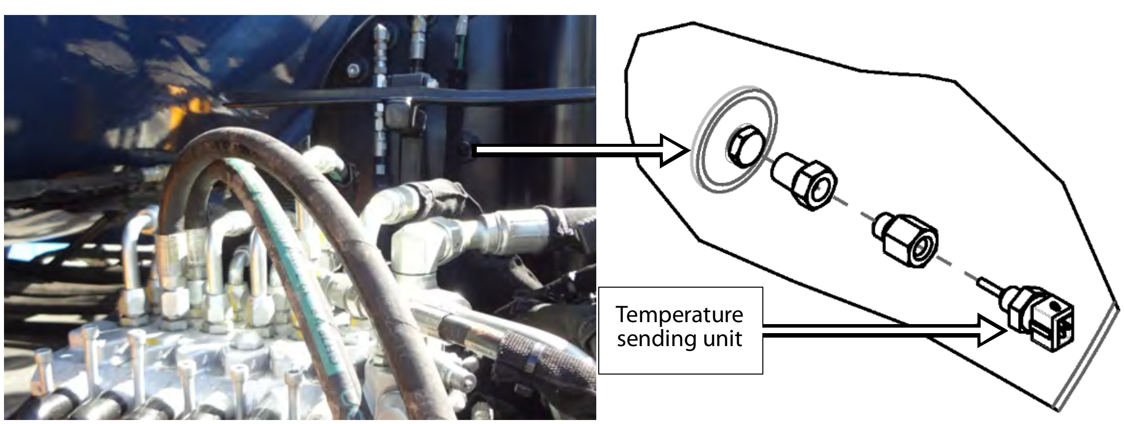
Figure 1-1 Valve bank



Temperature Sending Unit

If a *temperature sending unit* is fixed to the hydraulic oil tank (see Figure 1-2), oil temperature can be monitored by the IQAN electronic control system, a CAN-bus-based communication system installed on your truck. When the temperature reaches 200 °F (93.33 °C), a warning message appears on the MDM display screen (see Figure 2-15).

Figure 1-2 Temperature sending unit

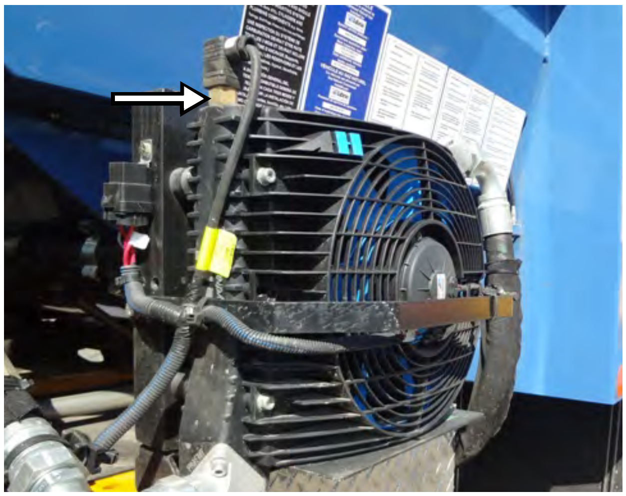


Oil Cooler Fan Thermostat

When the pack circuit hydraulic oil temperature exceeds 140 °F (60 °C), the thermostat is triggered and a relay is tripped. The fan motor will circulate during the time the oil temperature exceeds the safe thermostat rating. The battery power is protected by a 20 A fuse.

See the location of the fan thermostat in Figure 1-3.

Figure 1-3 Fan thermostat



Hour Meter

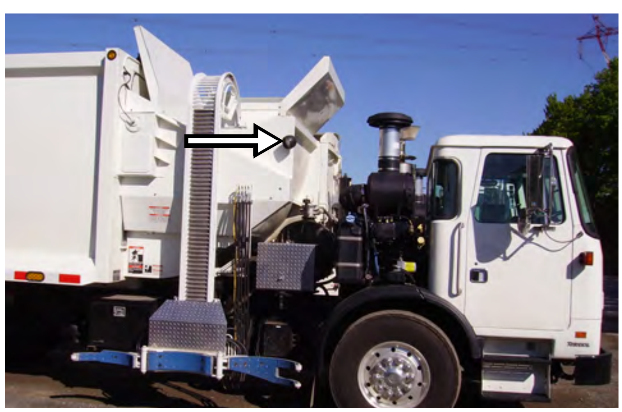
The hour meter device records the duration of the pump ON time and is accessible through the MDM display screen (see Figure 2-15).

NOTE: Tampering with the hour meter WILL VOID WARRANTY.

Lighting & Camera Equipment

Please note that there are numerous lighting and camera options available for your ALLEY-GATOR™. Please consult with the chassis dealer/Labrie for further recommendations, additions and technical data.

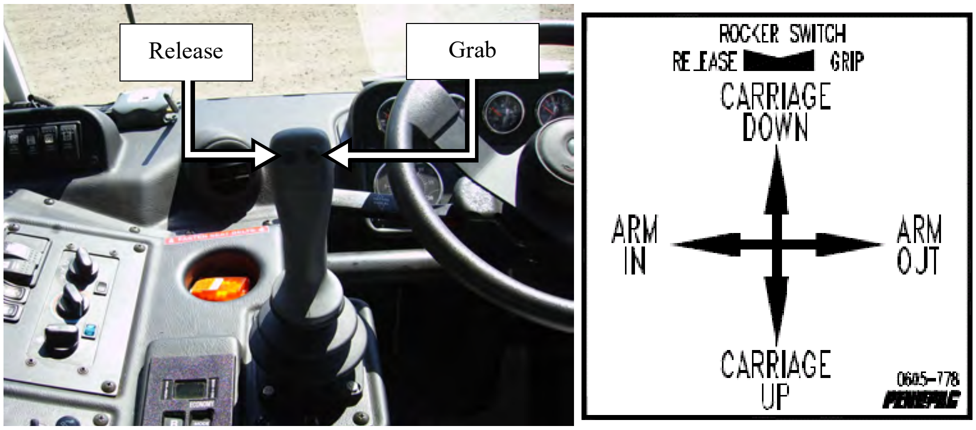
Figure 1-4 Arm light



Joystick

The joystick is a dual axis, electronic remote control lever that allows the operator to perform two proportional functions at the same time. Proportional operations control all movements of the arm and slide. The on-off thumbswitches located on the top of the lever are used to operate the grabber controls.

Figure 1-5 Joystick



Service and Maintenance on the ALLEY-GATOR™

Maintenance on the ALLEY-GATOR™ is of paramount importance to ensure long-lasting durability of all its moving parts as well as optimum performance in heavy work. Maintenance has to be done on almost every system involved in the operation of the ALLEY-GATOR™, such as the hydraulic, electrical and mechanical systems. Some parts are subjected to more wear and tear than others. Therefore, these parts need regular maintenance and routine check-up to prevent signs of deterioration as soon as possible.

NOTE: Any time you have a problem with a Labrie unit, you should contact your Labrie authorized dealer first. They should be able to provide you with the proper help that you need, whether it is for parts or technical service.

In this manual you will find the most common maintenance and inspection procedures required for the ALLEY-GATOR™.

Parts

Labrie refuse vehicle parts are offered exclusively through Labrie*Plus* and Labrie*Plus* authorized dealers. The quality and reliability of Labrie parts are second to none in the industry.

Warning

Your ALLEY-GATOR™ unit MUST BE COMPLETELY LUBRICATED before its first use. Refer to the lube chart near the hopper on the curbside to know where the lubrication points are located on the vehicle and how often the parts should be lubricated.

Initial lubrication carried out by Labrie Enviroquip Group is sufficient for production and transport purposes ONLY.

With your safety in mind, we would like to remind you that ONLY QUALIFIED MECHANICS should service the hydraulic, electrical, and pneumatic systems on your refuse vehicle. In addition, these mechanics should also be fully knowledgeable in the operation of this unit. Please read the Operator Manual prior to attempting any maintenance work on your ALLEY-GATOR™ unit.

ALLEY-GATOR™ Basic Maintenance

ALLEY-GATOR™ refuse bodies require routine maintenance to ensure product longevity as well as dependability. Various components have specific needs. A detailed portion of these items is listed below:

1) **Lubrication**

Your ALLEY-GATOR™ unit MUST BE COMPLETELY LUBRICATED before its first use.

All moving parts require lubrication for continued operation, longevity and dependability.

Maintenance intervals should be adjusted according to the truck's route or duty cycle. Proper greasing ensures the maximum life from the moving parts as it flushes out water and contaminants from the joint.

When greasing it is important to understand that providing the proper amount of grease is a delicate balance between over greasing, which can result in seal damage as well as wasted lubricant. Only pump enough grease until the air purges from the joint. Commonly, a "popping" sound can be heard as the old grease begins to evacuate the seal. Equally important is to remove the excess grease from the component you are maintaining. Leaving the excess grease will attract dirt and contaminants which could work themselves into the joint causing potential future issues.

2) **Body**

The body contains grease fittings for every operating cylinder as well as all linkages.

Without proper lubrication and maintenance, these parts can become seized, galled, and/or break resulting in equipment damage or injury.

3) **Hydraulic Fluid and Filter**

Hydraulic fluid is the lifeblood of the ALLEY-GATOR™ refuse body. Regular maintenance of the hydraulics will ensure long, trouble-free life.

As directed in all service training, the hydraulic filter needs to be replaced after the initial 50 hours of new truck operation and then again every 6 months, or when the filter restriction gauge is in the yellow. The hydraulic fluid needs to be replaced once a year along with the suction screen being removed, inspected, cleaned and/or replaced.

4) **Hardware**

Hardware needs to be verified that it is present and tight. Loose or missing hardware can cause severe damage and/or unsafe operational conditions.

5) **Proximity and Limit Switches**

Proximity and limit switches are used to limit travel of moving parts and/or to ensure conditions are safe for operation.

If these switches are not adjusted properly, damage to the equipment may occur as well as poor or dangerous functionality.

6) **Leaks**

Verify that there are not any leaking hydraulic cylinders, hoses, tubes, valves, or pumps. Leaks in the hydraulic system are an indicator of possibly overheating hydraulics, damage to a seal, over-pressurization, or general wear. To avoid costly and premature replacement of parts, ensure all leaks are addressed properly and timely.

7) **Cracks**

Ensure that there are not any cracks forming along the hopper floor edge, body, tailgate, crusher panel (optional) and arm. This is an indicator that something is worn, not adjusted properly or damaged.

8) **Bushings**/**Bearings**

Check for play in any bushing or bearing. This may require the use of a pry bar or lifting equipment.

Office Addresses and Phone Numbers

In the U.S.

Address:	1198 Shattuck Industrial Blvd. LaFayette, GA 30728
Toll Free:	1-800-231-2771
Telephone:	1-706-591-8764
General Fax:	1-706-639-9275
Oshkosh General Fax:	1-706-591-8766
Parts and warranty:	During business hours, 8:00 AM to 6:00 PM Eastern Standard Time
Technical Support Service:	Available 24 hours

In Canada

Address:	175A Route Marie-Victorin Levis, QC G7A 2T3
Toll Free:	1-877-831-8250
Telephone:	1-418-831-8250
Service Fax:	1-418-831-1673
Parts Fax:	1-418-831-7561
Parts and warranty:	During business hours, 8:00 AM to 5:00 PM Eastern Standard Time
Technical Support Service:	Available 24 hours
Website:	www.labriegroup.com
E-mail:	sales@labriegroup.com

IMPORTANT: **For technical support and parts ordering, the serial number of your vehicle is required. Therefore, Labrie Enviroquip Group recommends to keep record of the information found on the VIN plate, which is located in the cab.**

2

Safety

Safety comes first and Labrie Enviroquip Group is committed to your safety. Ultimately, safety is everyone's responsibility when operating or maintaining your ALLEY-GATOR™ Automated Side Loader. Make it your first priority! Be aware and apply the safety practices and features detailed in this manual.

Maintenance personnel should not perform any maintenance on the equipment if they are not well acquainted with the operations of the equipment as well as all safety precautions related to such operations.

Labrie Enviroquip Group will not accept any responsibility for failures and/or injuries caused by repairs done by the user and/or any persons other than authorized Labrie Enviroquip Group representatives.

Safety Precautions for the Owner

Labrie Enviroquip Group strongly believes that safety is a team effort. With this in mind, we encourage the employer to implement the following guidelines:

- Provide all employees – both operators and maintenance personnel – with proper safety procedures and training. Ensure that they are provided with the proper vehicle operation training and continually monitor their operational procedures. It is necessary that they have reviewed the ALLEY-GATOR™ Manuals and are familiar with all the warning decals on the vehicle.
- Provide operators with the necessary route rules and regulations. Instruct operators on awareness to road hazards such as people, obstructions and overhead hazards. Please ensure that all vehicle safety features, such as body safety props, tailgate props and lift locks, are utilized by your personnel when operating or servicing the ALLEY-GATOR™.
- Provide and inform employees to wear the necessary safety equipment.

- Ensure that a vehicle and safety equipment inspection is performed daily. Document the inspections, including all maintenance, repair and malfunction items. Keep inspection documents complete and current.

IMPORTANT: Under no circumstances should your ALLEY-GATOR™ be operated if damaged or malfunctioning. Have all repairs performed immediately.

Safety Precautions for the Employee

As an operator or maintenance employee, it is your responsibility to follow these guidelines:

- Ensure that you have been provided with safe operating and/or maintenance service training and procedures by your employer prior to operating the vehicle or performing maintenance service.
- Carefully read this manual.
- Obey proper operating procedures, safety guidelines and warning decals.
- Use the vehicle only as intended.
- Perform a daily vehicle inspection that includes the body and all operating systems, all vehicle safety equipment and safety decals located on and in your vehicle. Ensure that the inspection is documented and bring any defects to the attention of your supervisor.
- Prior to leaving for your daily route, ensure that all mirrors, windows and lights are clean and properly adjusted. Ensure that all cameras and monitors are properly adjusted and operating correctly.
- On your daily route, or during your service duties, stay safe. Obey all safety decals and safe operating procedures. Watch for other people, obstructions and overhead hazards.
- Always utilize the vehicle safety features, such as tailgate props and hoisted body prop.
- Remember to wear all safety equipment when loading and packing refuse or while performing service duties.

IMPORTANT: Under no circumstances should you operate damaged or malfunctioning equipment. Report all malfunctions to your supervisor immediately.

ALLEY-GATOR™ Road Rules

Rule the road with safety. Stay safe and help keep those around you safe. Prior to performing your daily route, know and obey the route rules and regulations provided by your employer and follow these important guidelines. As an operator you should never do the following:

- Drive with the body raised.
- Drive with an unlocked tailgate.
- Exit the cab without engaging the chassis parking brake.
- Back up the truck while unloading refuse.
- Hoist the body while on uneven ground.
- Prop a loaded body with the hoist safety prop.

- Enter the hopper or main body unless the engine is shut off, the key is removed and there is an out-of-service tag on the steering wheel.
- Stand under a raised body without the safety prop in place.

Safety Decals

Pay careful attention to all safety decals and warnings while operating/working in and around the ALLEY-GATOR™ Automated Side Loader. Keep your decals clean and in good condition at all times. For replacement decals, either individual or complete decal kits, call Labrie*Plus* at 1-800- 231-2771 in the U.S. or 1-877-831-8250 in Canada, and order using the part numbers as printed on the bottom of the decal. Bilingual decals are available in English/Spanish or English/French versions.

Safety Decal Categories

Recognizing and understanding the safety decals affixed to your vehicle can prevent damage and could prevent injury or even death. Decals fall into the following four categories:

DANGER: (White letters on Red Background) Extreme hazard of severe injury or death.

WARNING: (Black letters on Orange Background) Danger of death or severe injury.

CAUTION: (Black letters on Yellow Background) Danger of injury or equipment damage.

CAUTION: (Black letters on Yellow Background - no safety symbol) Danger of equipment damage only.

Figure 2-1 Safety decal categories



See your ALLEY-GATOR™ Operator Manual for a list of decals and placement locations on your truck.

Be sure to familiarize yourself with those decals.

Safety Features

NOTE: Your unit may not have all the safety features explained here. Check with your supervisor or maintenance department if you have any questions or concerns.

Automatic Grease System

When properly maintained, this optional system automatically ensures that the custom selected points either on the body or chassis receive the required amount of grease.

Counter Balance Valves

Counter balance valves provide a hydraulic lock to prevent the lift cylinders from bleeding oil back into the system. The resulting loss of pressure can result in hydraulic cylinder ‘creepage’ or an uncontrolled fall of the lift. Also, the counter balance valves will prevent the cylinder from retracting in the event of hose failure.

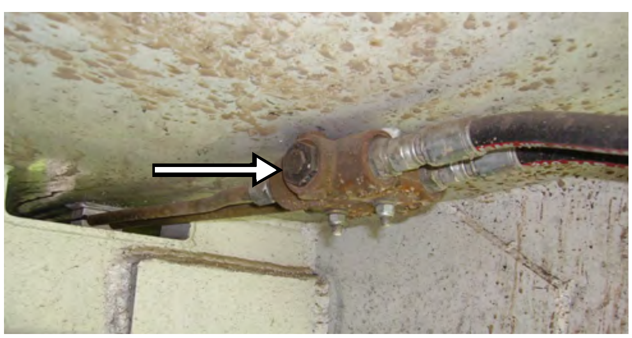
Grease Manifold

The centrally mounted grease manifold provides external grease nipples for all internal grease points, which removes the need for maintenance personnel to enter the body to grease cylinders and pivot points.

Pilot Operated Check Valves

The pilot operated check valves prevent the discharge of oil out of a cylinder in the event of hose failure (see Figure 2-2).

Figure 2-2 Pilot operated check valve



Environmental Spill Kit (optional)

This kit is used to contain hydraulic oil or diesel spill due to component failure. Consult with your maintenance and safety personnel for availability and location.

Figure 2-3 Optional environmental spill kit



Access Ladder Proximity Switch

Installed on the access ladder, this proximity switch disables/locks out all hydraulic functions when the ladder is deployed.

Figure 2-4 Extension Ladder proximity switch with ladder deployed (left) and in stored position (right)



IQAN MDM Master Control Module

The ALLEY-GATOR™ is equipped with an in-cab IQAN MDM.

Figure 2-5 IQAN MDM



The IQAN MDM is the main unit of the central control system. It contains the system's application software. In addition, the MDM contains a visual interface screen that displays text, parameters and other settings. All communication with the control system takes place from the MDM via the CAN-bus network.

Various error and warning messages may appear on the IQAN MDM screen to warn the operator to certain conditions. In some cases an accompanied buzzer sounds. Those messages are similar to the following:

ARM NOT PARKED: This warning message will appear on the screen when the arm is extended and is not in the home position. ***If the vehicle is in motion and the arm is not parked, pedestrians may be injured and/or other*** **obstacles may be struck.**

PACKER BLADE STALL: This warning message will appear on the screen if the packer blade has stalled. ***Stalling will occur*** **if the body is full or if an object has jammed the packer blade.**

BODY RAISED: This warning message will appear on the screen and a buzzer will sound if the body is not firmly seated on the chassis. ***The body should only be raised during unloading and maintenance.***

TAILGATE OPEN: This warning message will appear on the screen and the backup alarm will sound if the tailgate is not fully closed. ***The tailgate should only be open during unloading and maintenance***.

ACCESS LADDER: This warning message will appear on the screen and a buzzer will sound when the access ladder is deployed. ***All hydraulic functions become disabled when the access ladder is deployed.***

HYDRAULIC OIL TEMPERATURE: This warning message will appear on the screen and a buzzer will sound if the hydraulic oil temperature becomes dangerously high. ***Continuing to operate the hydraulic functions may result in*** **serious damage.**

HOPPER COVER: Your ALLEY-GATOR™ may be equipped with a hopper cover. If so, a warning message will appear on the IQAN MDM screen to alert you that the hopper cover is closed.

Fire Extinguisher (optional)

Your vehicle should be equipped with a fire extinguisher. This may be provided by the chassis manufacturer. A 20 lb (Class A, B, C) fire extinguisher is recommended.

Figure 2-6 Fire extinguisher (optional)



First Aid Kit (optional)

Your vehicle should be equipped with a first aid kit. It should be placed inside the cab for quick access.

Figure 2-7 First aid kit (optional)



Global Motion Sensors (optional)

The global motion sensors are an optional feature. The sensors are mounted on the tailgate of your ALLEY-GATOR™. The sensors detect obstructions from behind your vehicle and will then set the park brake and sound a buzzer to alert the operator of the rear obstruction. Please consult the OEM for more information.

Rear Vision Camera (optional)

The reverse camera mounted on the back door of the ALLEY-GATOR™ sends images to the monitor inside the cab when the transmission is in reverse or when the switch is set to 'ON'. Please consult the OEM for more information.

Figure 2-8 Rear vision camera (optional)



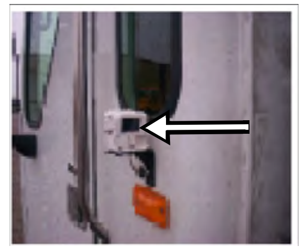
Hopper Camera/Side Door Camera (optional)

The hopper and side door cameras send information to the monitor inside the cab when the monitor is selected to the proper camera. Consult the OEM manual for more information.

Figure 2-9 Hopper camera (optional) left, side door camera (optional) right, camera monitor (inside cab) center



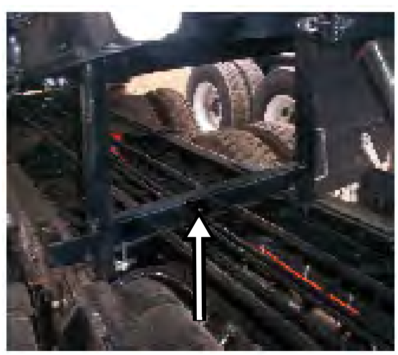




Hoist Safety Prop

Your ALLEY-GATOR™ is standardly equipped with a hoist safety prop (see Figure 2-10). Prior to performing any work around/underneath a lifted body, you must set the hoist safety prop. Never use the hoist safety prop to prop a loaded body. Always unload the body prior to setting the hoist safety prop. Refer to "Stabilizing a Hoisted Body" on page 25.

Figure 2-10 Hoist safety prop

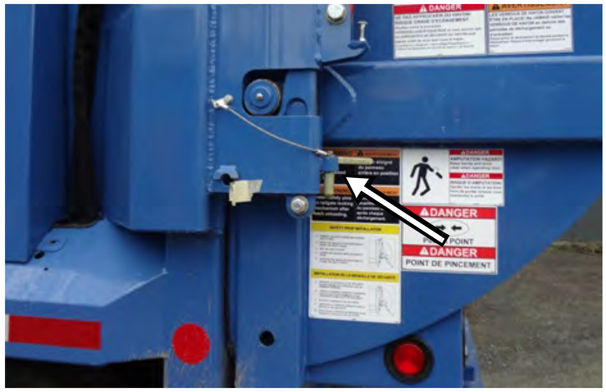


IMPORTANT: Always unload the unit before setting the hoist safety prop.

Tailgate Safety Pins

The tailgate pins are located on both sides of the rear of the body. The pins prevent the tailgate from opening accidentally. They MUST ALWAYS BE LATCHED WHEN THE VEHICLE IS IN MOTION. UNLATCH THEM WHEN UNLOADING REFUSE. Refer to "Utilizing Tailgate Pins" on page 23.

Figure 2-11 Tailgate safety pin



Tailgate Safety Props

The tailgate safety props are a standard safety feature on the ALLEY-GATOR™ (see Figure 2-12). They are located under the tailgate, one on each side. The tailgate safety props fit into a bracket on the body and prevent the tailgate from closing when your are working beneath/around an open tailgate. Refer to “Positioning the Tailgate Safety Props” on page 23.

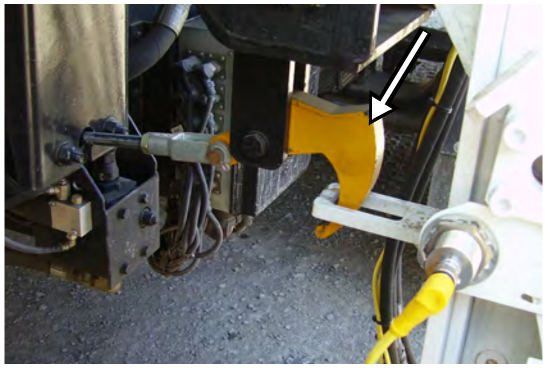
Figure 2-12 Tailgate safety prop



Lift Lock

The ALLEY-GATOR™ is equipped with an automatic lift lock (see Figure 2-13). The lift lock is designed to automatically lock at all times except during loading or unloading. It prevents the lift from extending unintentionally. Refer to “Immobilizing the Lift” on page 26.

Figure 2-13 Lift lock in engaged position



Safety Lockout Tests

Your daily inspection includes completing the safety lockout tests. Successful completion of these tests ensure that your vehicle is safe to operate.

If any of these tests fail, do not operate your vehicle until the appropriate adjustment or service has been completed.

NOTE: Your ALLEY-GATOR™ Side Loader may be equipped with other safety lockout options not mentioned here. Consult your supervisor and/or maintenance department if you have any questions or concerns.

Access Ladder Proximity Switch

Performing this test ensures the ASL[1] *access ladder proximity switch* is working (see Figure 2-4). ***If the access ladder is deployed (see Figure 2-14), all hydraulic functions should stop. It is imperative that you do not operate your ALLEY-GATOR™ with an inoperative or malfunctioning access ladder proximity switch.***

IMPORTANT: ***Remember extreme danger exists when working in or around the hopper!***

To perform this test:

1. DEPLOY the access ladder.
2. ENSURE the warning lamp on the control console illuminates, the *access ladder warning message* appears on the IQAN MDM screen (see Figure 2-15) and the buzzer sounds.
3. ATTEMPT to OPEN the tailgate. All hydraulic functions should be DISABLED.
4. IF ANY hydraulic function is OPERATIONAL when the ladder is extended, NOTIFY your maintenance supervisor immediately.

Location: This proximity switch is located at the base of the access ladder.

1. **Automated Side Loader**

Figure 2-14 Access ladder in deployed position



Figure 2-15 IQAN MDM display screen



Slide Proximity Switch

Performing this test ensures the *Arm not parked* message will appear on the IQAN MDM screen (see Figure 2-15) when the slide is extended from the home position. ***Failure to heed this warning message may result in serious personal injury or material damage from a lift which is extended during travel.*** This warning also prevents dumping of refuse outside the hopper.

To perform this test:

1. PARK the vehicle in a non-traffic area. You should have sufficient room to drive approximately 100 yards (91.44 m) forward.
2. EXTEND the slide.
3. CHECK that the warning lamp on the control console illuminates and the *Arm not parked* message appears on the MDM screen (see Figure 2-15).
4. DRIVE the vehicle forward and increase engine speed to over 1000 RPM.
5. STOP the vehicle and return the slide to the 'HOME' position (see Figure 2-17). The *Arm not parked* message on the MDM screen should disappear and the warning lamp should turn off.

6. IF the *Arm not parked* message DOES NOT appear on the MDM screen or the warning lamp DOES NOT illuminate when the lift is EXTENDED and the vehicle engine exceeds 1000 RPM, NOTIFY your maintenance supervisor immediately.

IMPORTANT: ***Do not operate the ALLEY-GATOR™ with an inoperative or malfunctioning slide proximity switch. Injury or death may occur!***

Location: This proximity switch is mounted to the slide tube frame closest to the streetside cooler.

Figure 2-16 Slide proximity switch

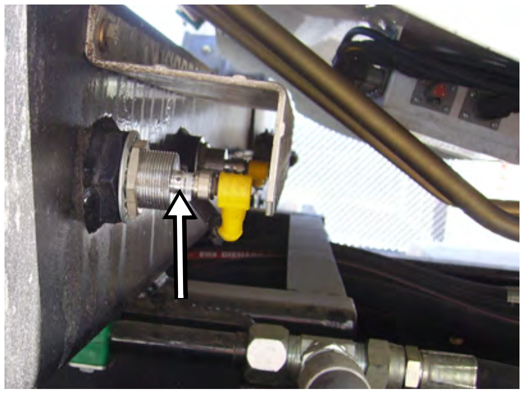


Figure 2-17 Slide retracted and in "HOME" position



Hopper Cover Proximity Switch (if equipped)

Performing this test ensures that you cannot accidentally dump refuse on top of the hopper cover.

To perform this test:

1. CLOSE the hopper cover.
2. ATTEMPT a dump cycle with an EMPTY can.
3. If the dump cycle completes, notify your maintenance supervisor immediately.

NOTE: The lift should still function to approximately 2/3 of the full lift height.

Body Raised Proximity Switch

Performing this test ensures you know when the body is properly seated on the chassis. The body should always be seated unless unloading or servicing is being performed!

IMPORTANT: ***Never drive the unit while the body is raised unless unloading.***

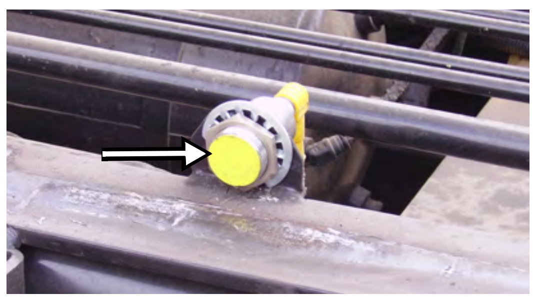
To perform this test:

1. LOWER the body, using the in-cab console *body UP/DOWN switch*. EXIT the cab and visually CONFIRM that the body is firmly seated on the chassis.
2. UNLATCH tailgate safety pins, and open the tailgate.

   Note the body will not raise unless the tailgate is OPEN.
3. ENTER the cab, RAISE the body, using the in-cab console *body UP/DOWN switch* and note when the warning lamp on the control console illuminates and the buzzer sounds. Both should occur immediately. A *body raised* message should also appear on the MDM screen.
4. IF the warning lamp DOES NOT illuminate or the buzzer DOES NOT sound, NOTIFY your maintenance supervisor immediately.

Location: This switch is mounted on the curb side of the chassis frame (see Figure 2-18).

Figure 2-18 Body Raised proximity switch



NOTE: The lifting arm cannot be parked when raising the body as it is hooked over the top of the hopper.

Lockout/Tagout Procedure

Performing the lockout/tagout procedure should be followed whenever you are inspecting, cleaning or repairing the ALLEY-GATOR™ Automated Side Loader.

IMPORTANT: ***Failure to follow the lockout/tagout procedure may result in serious injury or death.***

Prior to performing under body work, it is necessary to set the hoist safety prop. Refer to “Hoist Safety Prop” on page 16.

To lock out and tag out your ALLEY-GATOR™ unit:

1. SET chassis park brake.

2. TURN OFF engine, REMOVE keys from ignition and STORE keys in a safe controlled area. It is recommended that you keep the keys on your person.
3. MOVE any one of the hydraulic controls to RELIEVE any residual pressure in the system.
4. PLACE an Out-of-Service tag on the steering wheel using a non-reusable fastener and place an Out-of-Service sign in the front window.
5. TURN OFF and LOCK the battery switch.
6. CHOCK the wheels.

Figure 2-19 Lockout tags



Figure 2-20 Shut off engine, remove keys from ignition and store them in a safe controlled area



Lockout Reference Chart

Extension ladder deployed	All hydraulic functions inoperative
Vehicle engine over 1000 RPM	Slide out, grip close, lift up and grabber inoperative
Slide not extended beyond hopper	Dump inoperative

Lift raised above vertical	Grabber OPEN inoperative
Hopper cover closed (or not fully open) - if equipped	Lift up function will not operate above vertical
Slide in	Body up function inoperative
Body raised	Slide in function inoperative
Tailgate closed & arm not extended	Body will not raise

Utilizing Tailgate Pins

The tailgate pins (see Figure 2-21) must be secured unless you are:

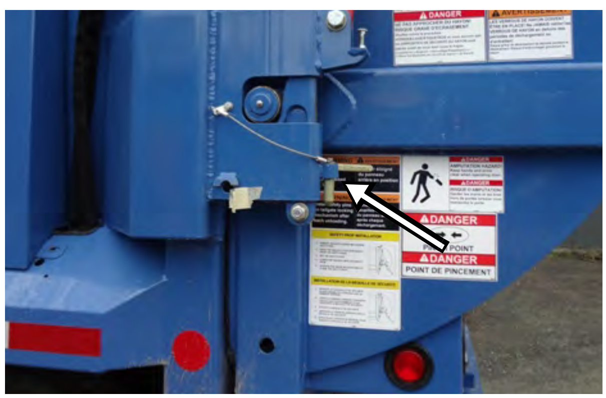
- unloading refuse
- servicing the tailgate

The tailgate pins ensure that the tailgate cannot be opened accidentally.

IMPORTANT: ***Before operating the ALLEY-GATOR™ Automated Side Loader, secure both tailgate pins.***

IMPORTANT: Before opening the tailgate, remove both tailgate pins.

Figure 2-21 Tailgate pin



Positioning the Tailgate Safety Props

Tailgate safety props have been installed on your ALLEY-GATOR™ Automated Side Loader (see Figure 2-22). They are located on each side of the tailgate. These props are there for your protection. When latched, they ensure that the tailgate will not close while you are working beneath or around a tailgate.

IMPORTANT: ***Never walk or work under the tailgate without first positioning the tailgate props.***

To position the tailgate props, do the following:

1. ENSURE there is adequate room behind the truck to open the tailgate.
2. REMOVE both tailgate pins (see Figure 2-21).
3. OPEN the tailgate by approximately 3 ft (0.91 m).
4. UNLATCH each prop from its stored position and SWIVEL it towards the side of the truck until it can be set. LATCH into place.
5. CLOSE the tailgate as much as possible. Both props should fit securely into the tailgate latch hook preventing the tailgate from fully closing.
6. COMPLETE the Lockout/Tagout Procedure. Refer to “Lockout/Tagout Procedure” on page 21.

Figure 2-22 Tailgate safety prop



Figure 2-23 Danger decal



IMPORTANT: Never walk or work under the tailgate when it is open unless the tailgate safety props are installed!

Stabilizing a Hoisted Body

The ALLEY-GATOR™ Automated Side Loader is equipped with a hoist safety prop (see Figure 2-24). This safety prop is designed to stabilize the lifted body, thus allowing you to safely work beneath the body.

IMPORTANT: The hoist safety prop must be engaged if access under a lifted body is required. Do not use the hoist safety prop to prop a loaded body!

To stabilize a hoisted body:

1. ENSURE that the truck is on solid, level ground and the body is empty. SET the chassis park brake.
2. CHECK for overhead clearance and CHOCK the front and rear tires.
3. UNLATCH the spring storage latch.
4. RAISE the body until the safety prop hangs free.

IMPORTANT: ***Do not raise the body higher than is required for the prop.*** **If the unlatched prop does not swing into place with the body raised, the prop has been damaged and must be repaired prior to use.**

5. LOWER the body until the safety prop feet fits into the prop retainer cut-outs and seats securely onto the chassis frame.
6. COMPLETE the Lockout/Tagout Procedure. Refer to “Lockout/Tagout Procedure” on page 21.

Figure 2-24 Hoist safety prop in engaged position



Figure 2-25 Warning decal



Immobilizing the Lift

Your vehicle is equipped with a lift lock (see Figure 2-27). The lock prevents the extension of the lift slide. Ensure that this lock is always in place except when loading or unloading. The lift is secured by means of an automatic operated lift lock.

To SET the lock:

1. RETRACT the lift to the 'HOME' position (slide retracted fully). See Figure 2-26.
2. ENSURE the hydraulic pump is OFF. The lift lock should lock automatically.
3. PLACE the vehicle in PARK and SET the chassis park brake.

IMPORTANT: Be sure the vehicle is parked on level ground and in a low/no traffic area.

4. EXIT the cab and ENSURE that the lift lock is SET (the lock is located behind the lift).

To RELEASE the lock:

1. PLACE the vehicle in PARK and SET the chassis park brake.

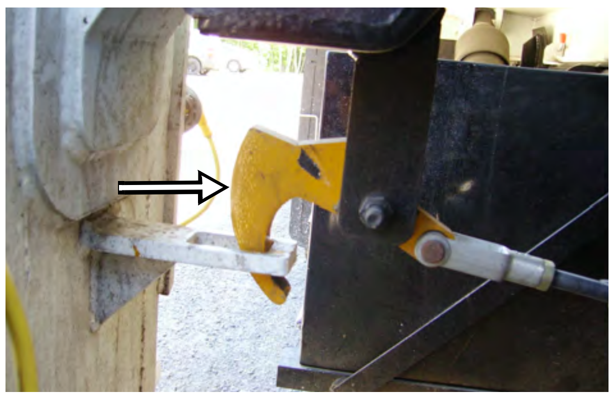
NOTE: Be sure the vehicle is parked on level ground and in a low/no traffic area.

2. OPERATE the joystick to RETRACT the slide. This will relieve any pressure on the lock.
3. ENSURE the hydraulic pump is ON. The lift lock should unlock automatically.
4. EXIT the cab and ENSURE that the lift lock is RELEASED.

Figure 2-26 Slide retracted and in "HOME" position



Figure 2-27 Lift lock in engaged position



Raising the Front-End Body

It may be required to raise the front-end body to complete repairs. For this, you will require two 9-foot 7-inch (292.1 cm) chains, one shackle, two grab hooks and an appropriate lifting device such as an overhead crane.

Caution!



Do not lift the front-end body if the hinges at the rear end of the body are not securely fixed to the frame rails.

Use grade 80 lift chains with a working load limit of 7100 lbs (3.2206 tonnes).

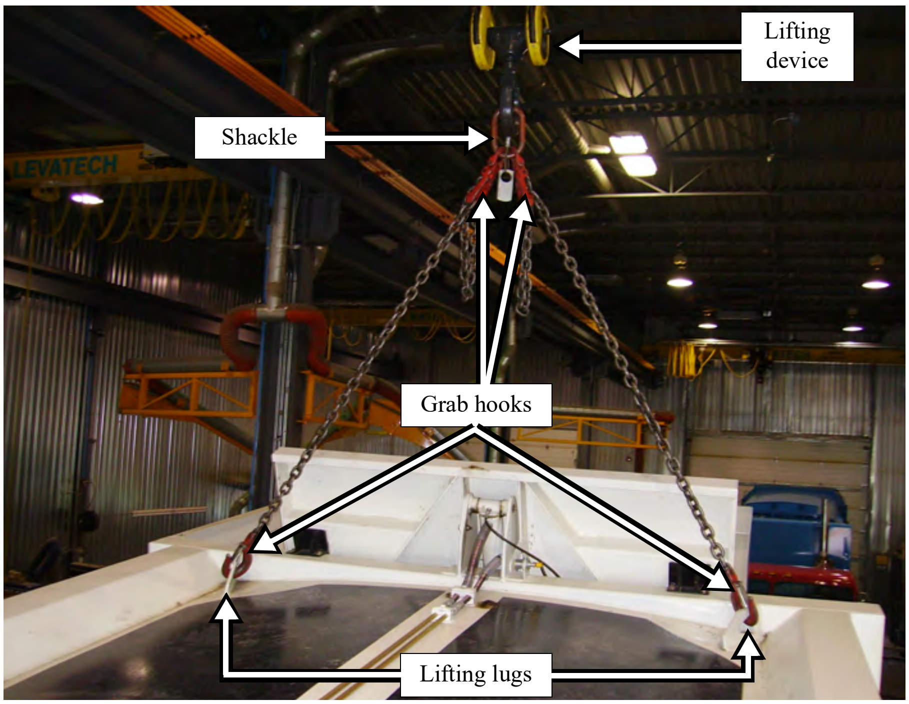
To raise the front-end body:

1. INSPECT and REPAIR, if needed, the welds on the front-end body's lifting lugs (see Figure 2-28).
2. ATTACH a chain to each of the lifting lug with a grab hook.

3. ATTACH the loose end of each chain to the shackle using grab hooks (see Figure 2-28). Shorten chains as tight as possible.
4. FIX the shackle to an appropriate lifting device, such as an overhead crane.
5. CONFIRM proper fixation.
6. RAISE the front-end body with adequate lifting device.

NOTE: The shackle used must have a working load limit of 4.75 tons (4.8260 tonnes).

Figure 2-28 Proper lifting installation



3

Maintenance

Cautionary Notes for Maintenance Personnel

Keeping your safety in mind, please note that it is imperative that ONLY QUALIFIED PERSONNEL (who are knowledgeable with the operations of the vehicle) perform service to the hydraulic, electrical and pneumatic systems of the Alley-Gator™.

Please read carefully the SAFETY INFORMATION (chapter 2, in this manual), VEHICLE CONTROLS (chapter 2, in the Operator Manual), and VEHICLE OPERATION (chapter 3, in the Operator Manual), prior to attempting any maintenance on your Alley-Gator™ Side Loader.

For Welding Purposes

For welding purposes, please note that the ASL body is primarily composed of two types of steel, ASTM A715, (grade 80) and Hardox 450 (hardened steel). It is recommended that you use either low hydrogen electrodes E11018 or Spool Arc 83 mig wire.

NOTE: **Prior to welding on packer body, DISCONNECT ALL BATTERIES and ELECTRONIC MODULES.**

NOTE: **REMOVE PAINT before welding or heating.**

NOTE: **Do not weld near PRESSURIZED LINES or LINES CONTAINING FLAMMABLE FLUID.**

Caution!

DISCONNECT all batteries and electronic control modules PRIOR to welding on body.
Failure to observe this procedure may lead to severe damage to electronic components.

Hydraulic Oil

The most crucial element to the hydraulic system is the hydraulic oil. It provides the system with vitality. The oil transports damaging contaminants to filtering systems, lubricates and provides anti-wear protection against component corrosion.

Regular oil changes are vital to the lifespan of hydraulic system components. Overtime, particles in the oil will deteriorate the hydraulic system. Observation of the oil color change signifies oxidization and the need to be replaced. At that time, the oil will appear cloudy or milky. Keep in mind operational performance, load and environmental conditions are variables that determine the frequency of hydraulic oil renewal.

Following stringent maintenance schedules and performing routine oil analysis are effective methods of obtaining information to determine the cleanliness of the hydraulic oil. Labrie Enviroquip Group ***recommends that the hydraulic oil be replaced at least once a year or when contaminated. Failure to maintain hydraulic cleanliness to recommended guidelines may result in failure of hydraulic components and void your warranty.***

Oil Filtration

Your hydraulic system requires filtration for performance and longevity. Excessive particle contaminants over a period of time will result in poor hydraulic performance and/or failure. The hydraulic system on your Alley-Gator™ is protected with ***one return line filter*** and ***one in-line pressure filter***. ***These filters must be changed after the first 50 hours of use, and twice a year afterwards. Replacement guidelines are provided below.***

Filter Replacement

Labrie Enviroquip Group recommends the filter elements be replaced twice a year or as per the pop-up indicator (on the filter). Examination of routine contamination is also recommended. Regular filter replacement done by qualified maintenance personnel helps to remove trapped contaminants that are conducive to your system. Consideration needs to be given to the operating conditions and duty when further determining the replacement interval. ***Replacement procedures for both types of filters are detailed on the*** **following pages.**

NOTE: **The element must also be changed following a major hydraulic component failure.**

Please consider the following recommendations by Labrie Enviroquip Group when replacing your filters.

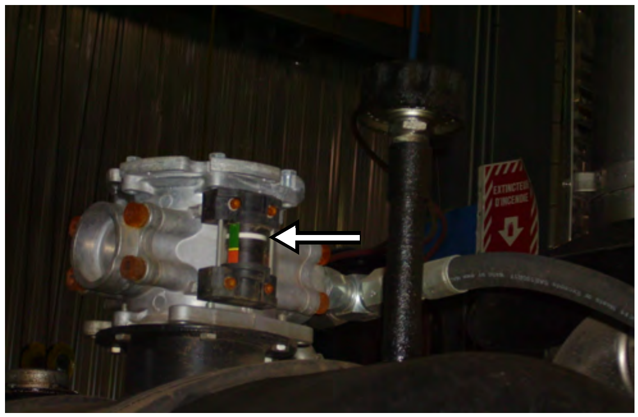
In-Line Pressure Filter (2)	5 micron
Return Line Filter (in tank)	10 micron

Hydraulic Return Line Filter

A *10 micron return line filter* element is located inside the hydraulic tank. All oil returning to the hydraulic tank is passed through this filter. The filter is fitted with a pop-up indicator that signals time of replacement. Please see above for the recommended replacement filter. Filters may be ordered directly from Labrie Enviroquip Group by calling our Parts Department.

NOTE: Your unit may be equipped with a dirty filter element.

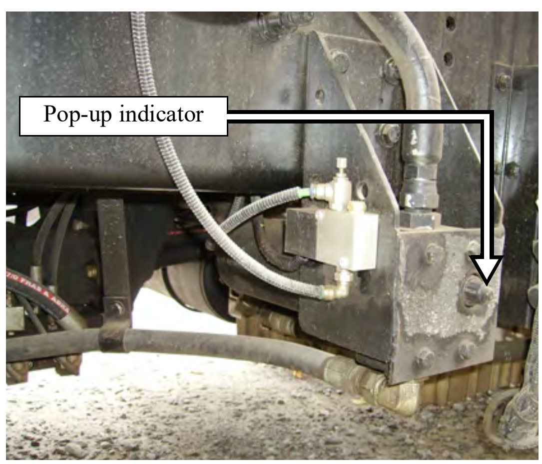
Figure 3-1 Dirty filter element



In-Line Pressure Filter

This *5 micron in-line pressure filter* is located behind the lift and under the chassis (see Figure 3-2). Hydraulic oil is passed through this filter. This filter is also fitted with a pop-up indicator that signals time of replacement. Please see above for the recommended replacement filter. Filters may be ordered directly from Labrie Enviroquip Group by calling our Parts Department.

Figure 3-2 In-line pressure filter



Return Line Filter Element

NOTE: While every effort is made at the Labrie factory to ensure clean hydraulic systems, it should be noted that most hydraulic system manufacturers recommend the filter be replaced after a break-in period. Labrie's recommendation is to replace this filter element after a break-in period of 50 operating hours.

Return line Filter Element Replacement Procedure

The following is the procedure to replace the return line filter element:

1. SWITCH OFF the hydraulic system. Refer to "Lockout/Tagout Procedure" on page 21.

   Keep tools, working area and equipment clean. A pan will be required to collect a small amount of oil lost as the element is removed.
2. SLOWLY remove the hydraulic tank cap (see Figure 3-3).

   SLOW turning will RELEASE system pressure.
3. LOOSEN the 4 cover plate screws.

   If equipped with a Parker Return Filter, as depicted in Figure 3-4, there are 6 screws).
4. ROTATE the cover plate 45 degrees and lift off.
5. REMOVE the element by the handle.

   ROTATING during removal will help release suction.
6. REMOVE and CLEAN the yellow contamination retainer. INSTALL onto the new filter.
7. INSPECT o-rings and housing for damage. REPLACE as necessary.
8. MOISTEN the filter housing and cover plate sealing surfaces with oil.
9. PLACE the new filter element into housing.
10. REPLACE the cover plate and PUT all bolts back in.
11. OPERATE the hydraulic system and check for leaks.

Figure 3-3 Hydraulic tank cap

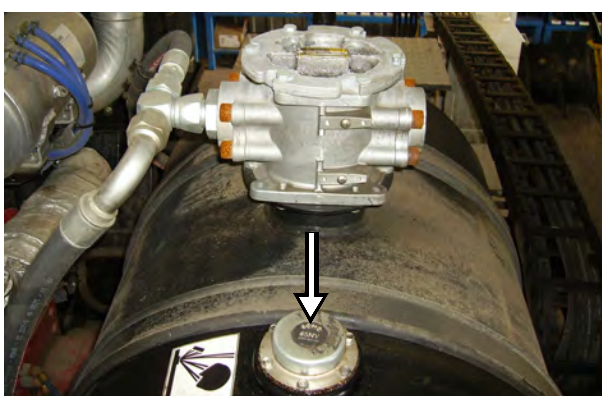
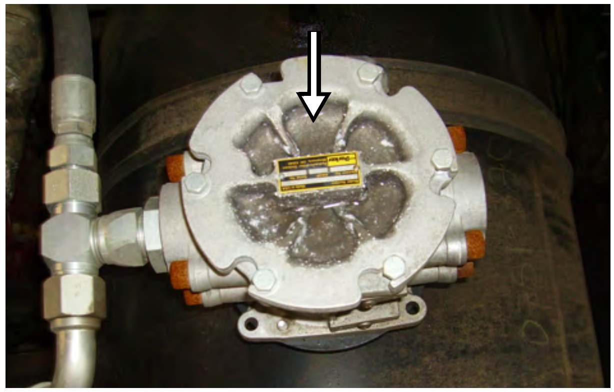


Figure 3-4 Parker return filter



In-Line Pressure Filter

NOTE: Hydraulic system manufacturers recommend the first filter replacement be made after a break-in period. Labrie's recommendation is to replace the filter elements after a break-in period of 50 operating hours.

In-Line Pressure Filter Replacement Procedure

Follow this procedure to replace in-line pressure filters (see Figure 3-2):

1. SWITCH OFF the hydraulic system. Complete the Lockout/Tagout Procedure as instructed on page 21.
2. REMOVE the filter housing from the chassis and REMOVE the filter from the housing.
3. CLEAN and INSPECT housing for damage, REPLACE if necessary.
4. INSPECT o-rings for damage and replace if necessary.
5. PLACE the new filter element into housing.
6. MOISTEN the filter housing and filter mount sealing surfaces with oil.
7. INSTALL the filter housing onto the chassis.
8. OPERATE the hydraulic system and CHECK for leaks.

Recommended Maintenance Schedule

Table 1 Lubrication

Description	Schedule (Performer)
Tailgate hinge pins (2)	Biweekly (optional)
Tailgate cylinder pins (4)	Biweekly (optional)
Latch roller pins (2)	Biweekly (optional)
Latch pins (2)	Biweekly (optional)
Rear body hinge pins (2)	Biweekly (optional)
Inspect hydraulic oil level in tank	Daily (optional)
Body lift cylinder pins (4)	Biweekly (optional)
Manual greasing system manifold, pack blade (6)	Daily (optional)
Inspect grease in auto greasing system reservoir	Weekly (optional)
Grease all arm grease zerks (8)	Daily (optional)
Inspect unit for leaks	Daily (optional)
Grease pump drive line (3)	Weekly (optional)

NOTE: Some lube points may be greased by an automatic grease system. Consult the manufacturer's manual for information.

Table 2 Cleaning

Description	Schedule (Performer)
Safety decals	Pre-trip (operator)
Mirrors, lights, windows, camera	Pre-trip (operator)
Clear debris at tailgate seal	At landfill (operator)
Clear contact surfaces of body and chassis	At landfill (operator)

Table 2 **Cleaning (cont'd)**

Description	Schedule (Performer)
Clear debris on lift (if any)	At landfill (operator)
Wash complete body and chassis (more often if required)	Weekly (operator)
Other	As specified by FMCSR and/or owner

Table 3 **Mechanical inspection (performed when truck is at rest or stopped)**

Description	Schedule (Performer)
IMPORTANT: Inspect for distortion, cracks and/or unusual wear. Ensure mounting and pin retainer bolts are intact and tight.	
Body seated flat on chassis	Pre-trip (operator), monthly (maintenance)
Body mounts (6) and related nuts, bolts, and springs	Pre-trip (operator), monthly (maintenance)
Body hinge ears (2), pins (2), and retaining hardware	Pre-trip (operator), monthly (maintenance)
Body raise cylinder ears (4), pins (4), & retaining hardware	Pre-trip (operator), monthly (maintenance)
Body raise cylinder mounting bolts on chassis (quantity varies)	Pre-trip (operator), monthly (maintenance)
Hoist safety prop and prop retainers [inspect prior to using]	Operator (weekly)
Lift assembly	Pre-trip (operator), monthly (maintenance)
Lift assembly mounting bolts, lock washers and nuts	Pre-trip (operator), monthly (maintenance)
Lift bearings	Pre-trip (operator), monthly (maintenance)
Lift cylinder ears, pins & retaining hardware	Pre-trip (operator)
Pendulum assembly	Monthly (maintenance)
Pack pendulum cylinder pins (4) & retaining nuts/bolts	Daily (operator), monthly (maintenance)

Table 3 Mechanical inspection (performed when truck is at rest or stopped) - cont'd

Description	Schedule (Performer)
Interior of hopper and main body walls, floor and roof	Pre-trip (operator), monthly (maintenance)
Exterior of hopper and main body walls, floor & roof	Pre-trip (operator), monthly (maintenance)
Hopper cover assembly (optional, if equipped)	Pre-trip (operator), monthly (maintenance)
Hopper cover cylinder pins, ears, and retaining hardware (optional, if equipped)	Pre-trip (operator), monthly (maintenance)
Hopper cover cylinder clamp & related nuts/bolts (optional, if equipped)	Pre-trip (operator), monthly (maintenance)
Tailgate assembly	Pre-trip (operator), monthly (maintenance)
Tailgate cylinder ears (4), pins (4) & retaining hardware	Pre-trip (operator), monthly (maintenance)
Tailgate latch assembly (2), pivots (2) and roller pins (2)	Pre-trip (operator), monthly (maintenance)
Tailgate seal & seal retainer	At landfill (operator)
Tailgate hinge ears (2), pins (2) & retaining hardware	Pre-trip (operator), monthly (maintenance)
Tailgate safety props	Pre-trip (operator), monthly (maintenance)
Lateral movement of arm	Weekly (maintenance)
Safety equipment present (e.g. fire extinguisher, first aid kit)	Pre-trip (operator)
Other	As specified by FMCSR and/or owner

Table 4 **Operation (main controls)**

Description	Schedule (Performer)
IMPORTANT: Observe that travel is smooth and even, speed is normal, and controls are responsive	
Lift up/down (check cushions & warning light function)	Daily (operator)
Slide extend/retract (check cushions & warning light function)	Daily (operator)
Grabber open/close (check cushions & warning light function)	Daily (operator)
Pendulum pack/return/auto-pack/auto-stop (check stall warning light function)	Monthly (maintenance)
Hopper cover open/close (optional, if equipped)	Daily (operator)
Tailgate open/close	Daily (operator)
Body raised up/down	Daily (operator)
IMPORTANT: Perform safety lockout tests to check limit and proximity switches	
Access ladder test (access ladder proximity switch)	Daily (operator)
Tailgate test (tailgate limit switch, check for warning light & buzzer)	Daily (operator)
Lift up lockout/hopper cover test (hopper cover limit switch - optional, if equipped)	Daily (operator)
Body up lockout (body up function locked out if lift not extended)	Daily (operator)
Lift up lockout (lift up function locked out if body is raised)	Daily (operator)
Other	As specified by FMCSR and/or owner

Table 5 Operation (misc. controls and features)

Description	Schedule (Performer)
IMPORTANT: Check control console warning devices are functioning	
Pump button light	Daily (operator)
Hopper cover warning light (optional)	Daily (operator)
Tailgate open warning light/external alarm (tailgate open limit switch)	Daily (operator)
Lift elevated warning light & optional buzzer (activates if vehicle exceeds 1000 rpm)	Daily (operator)
Body raised warning light/buzzer	Daily (operator)
IMPORTANT: Check external lights and miscellaneous are functioning	
Stop, signal and tail lights	Pre-trip (operator), daily (optional)
Marker lights	Pre-trip (operator), daily (optional)
Hopper light	Pre-trip (operator), daily (optional)
Lift light	Pre-trip (operator), daily (optional)
Backup lights	Pre-trip (operator), daily (optional)
Backup flood lights	Pre-trip (operator), daily (optional)
Strobe lights (if equipped)	Pre-trip (operator), daily (optional)
Camera lights	Pre-trip (operator), daily (optional)
Alternating flashers (if equipped)	Pre-trip (operator), daily (optional)
Backup alarm	Pre-trip (operator), daily (optional)
Perimeter/proximity motion sensors (if equipped)	Pre-trip (operator)
IMPORTANT: Check miscellaneous control console devices are functioning	
Other	As specified by FMCSR and/or owner

Table 6 Hydraulic systems

Description	Schedule (Performer)
Check for leaks, damage, etc. on hydraulic oil tank	Pre-trip (operator), monthly (maintenance)
Confirm that hydraulic oil tank is securely mounted to chassis frame	Pre-trip (operator), monthly (maintenance)
Check oil level in hydraulic oil tank (all cylinders retracted)	Pre-trip (operator), monthly (maintenance)
Check oil condition (not burnt/dirty)	Monthly (maintenance)
Replace oil	Once a year or as required
Confirm that suction ball valve is fully open	Pre-trip (operator), monthly (maintenance)
Replace the breather cap	Yearly or as soon as it is clogged or damaged (maintenance)
IMPORTANT: To protect the hydraulic components of your new equipment, the return line filter and the in-line pressure filter must be changed after the first 50 hours of use. Afterwards, the filters should be changed every 6 months or as per the "pop-up" service indicator or following a major hydraulic component failure.	
Change hydraulic return line filter	Twice a year or as per indicator
In-line pressure filter (1)	Twice a year or as per indicator
Clean magnetic plug pumps	At each oil change
Inspect pumps for leaks	Pre-trip (operator), monthly (maintenance)
Ensure pumps are securely mounted	Pre-trip (operator), monthly (maintenance)
Ensure drive-line is securely mounted	Monthly (maintenance)
Inspect valve banks for leaks	Pre-trip (operator), monthly (maintenance)
Ensure valve banks are securely mounted	Pre-trip (operator), monthly (maintenance)
Check system pressure relief valve settings. Adjust if required	Annually or every 2500 hours (whichever is more frequent) [use pressure gauge; record]

Table 6 Hydraulic systems (cont'd)

Description	Schedule (Performer)
Inspect all hydraulic lines for leaks, chafing	Pre-trip (operator), monthly (maintenance)
Inspect all hydraulic cylinders and misc. hydraulic components for leaks	Pre-trip (operator)
Other	As specified by FMCSR and/or owner

Table 7 Chassis pneumatic system

Description	Schedule (Performer)
Drain air tanks [at the end of each day]	Daily (optional)
Inspect air lines for leaks	Daily (operator)
Other	As specified by FMCSR and/or owner

Troubleshooting Methodology

Troubleshooting is an organized study of the problem and a planned method of investigation and correction.

Think about the following before proceeding:

What were the warning signs prior to failure?
Do not rule out previous failed attempts.
Ensure components and wiring are installed as per factory specs.
Check the obvious things first. Keep it simple.
Work through troubleshooting charts methodically.
Many problems can be traced not to one part alone, but to the relationship of one part with another.
For multiple electrical faults, check the common ground locations.
Use the Troubleshooting Guide as a reference only. It may not contain all the answers.
Use a test light and jumper wire to trace and eliminate.

Identify heat build-up using an infrared sensor.
Carry out flow and pressure tests before removing components.
Keep to Maintenance Schedules.

4

Lubrication

To help the various systems of your truck run smoothly and extend the life time of the many critical parts that affect performance, there is one thing that you must do and that is:

LUBRICATE, LUBRICATE AND LUBRICATE!

Insufficient lubrication is a major cause of component failure on all refuse vehicles. The ALLEY-GATOR™, like most equipment, has many points that require grease.

Refer to the lubrication chart (see Figure 4-2) located on the side of the vehicle for a complete list of lube locations and the frequency with which they should be greased.

Recommended Lubricants

Below you will find the recommended types of lubricants.

Grease

Any lithium-base commercial multipurpose grease may be used.

Hydraulic Oil

All Labrie hydraulic systems are filled at the factory with a high-quality anti-wear hydraulic fluid meeting an ISO 32 specification. On vehicles that are used in high ambient temperatures or that sustain high duty cycles, it may be desirable to change the fluid to an ISO 46 specification which has higher viscosity. For vehicles working in colder climates or performing light duty cycles, an ISO 22 might be more appropriate. The International Standards Organization (ISO) assigns specification numbers in order that a consumer receives the same product from different suppliers.

ISO Grade	22	32	46
Viscosity @ 100 F, SUS	115	163	231
Viscosity @ 210 F, SUS	43	47	53
Viscosity Index (Min.)	160	147	153
Pour Point	-65 F	-60 F	-54 F

Other important points to note:

- The oil must contain anti-wear and anti-foam additives, rust and oxidation neutralizers and self-protecting agents.
- The oil must be absolutely clean and free of contaminants.

Any hydraulic oil that possesses such properties may be used on all Alley-Gator™ units.

Important: It is the customer's responsibility to use oil that is appropriate to the climate.

Caution! Do not mix different brands of oil. In doubt, drain and refill with new oil.

Oil Identification

The Alley-Gator™ has an oil identification tag that specifies the manufacturer's brand of hydraulic oil that your vehicle has been filled at the Labrie factory. When oil replacement becomes necessary other equivalent oil by other manufacturers may also meet your application requirements.

The oil identification tag is located on the hydraulic tank. Replacement decals may be ordered from the Labrie Parts Department.

Figure 4-1 Example of an oil identification tag



Engine Oil

Refer to the engine manufacturer’s maintenance manual for recommended type of engine oil.

Transmission Oil

Refer to the transmission manufacturer’s maintenance manual for recommended type of transmission oil.

Lubricating

Automatic Greasing System

Your ALLEY-GATOR™ Side Loader may have a factory installed optional Automatic Greasing System. The system automatically supplies grease to numerous points on the Alley-Gator’s chassis and body. The number of points will vary as per your customized order.

To ensure proper operation of the system, never let the grease fall below the minimum level as indicated on the grease reservoir. Labrie recommends that the grease reservoir be filled with OEM-recommended grease. You may order this product and system parts from Labrie by contacting our Parts Department toll free at 1 (800) 231-2771 in the U.S. or 1 (877) 831-8250 in Canada.

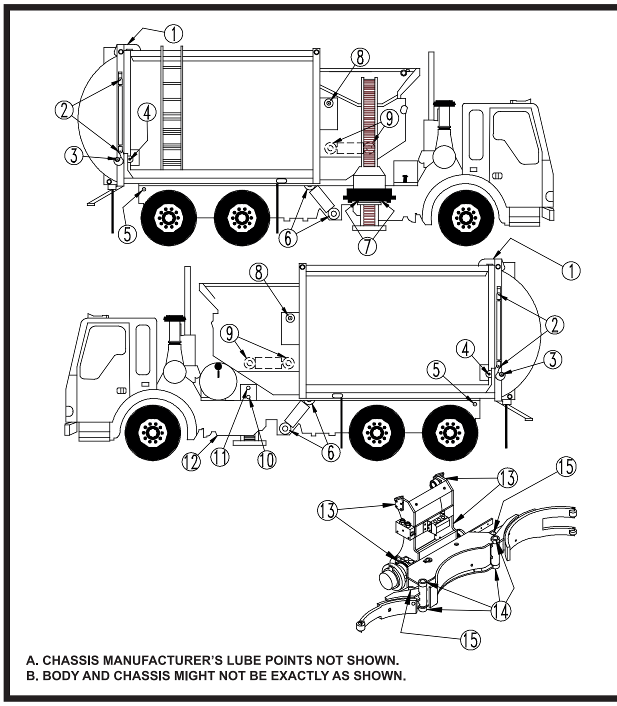
Please consult the OEM product information that has been supplied with your ALLEY-GATOR™ for further information and maintenance material. The provided data includes preventive maintenance, system testing and a troubleshooting chart. Further inquires regarding your automatic greasing may be directed by contacting our Service Department at 1 (800) 231-2771 in the U.S. or 1 (877) 831-8250 in Canada.

Lube Points

NOTE: Routine lubricating reduces component failures.

Your new ALLEY-GATOR™ Side Loader has numerous points that require routine lubricating. Although complete lubrication has been performed at the Labrie factory, it is strongly recommended that the ALLEY-GATOR™ be fully lubricated prior to operating. Figure 4-2 depicts the location of the lubrication points. Please refer to “Recommended Maintenance Schedule” on page 34 for itemized lube points and recommended frequency.

Figure 4-2 Lube points on body



Labrie Enviroquip Group

LUBRIFICATION INFO.

ITEM	QTY.	DESCRIP.	DAILY	WKLY.	B/WKLY.
1	2	TAILGATE HINGE PINS			X
2	4	TAILGATE CYL. PINS			X
3	2	LATCH ROLLER PINS			X
4	2	LATCH PINS			X
5	2	REAR BODY HINGE			X
6	4	BODY LIFT CYLINGER			X
7	6	EXTEND ROLLER LS	X		
8	2	PENDULUM HINGE	X		
9	4	PENDULUM HINGE	X		
10	1	LIFT EXTEND CYL.	X		
11	1	TAILGATE HINGE PINS	X		
12	3	TAILGATE HINGE PINS		X	
13	4	TAILGATE HINGE PINS	X		
14	4	TAILGATE HINGE PINS	X		
15	4	TAILGATE HINGE PINS	X		

175900

More Notes on Lubrication

The oil identification tag located on the hydraulic oil tank specifies the manufacturer's brand of oil that was filled at the Labrie factory. Equivalent oil by other manufacturers may also meet your application requirements. Labrie Enviroquip Group recommends that you refer to the guidelines on page 43 and consult the oil manufacturer to ensure that your needs are fulfilled.

NOTE: Cold weather operation requires special oil considerations. Viscosity should not exceed 7500 SUS (1620 cSt) at lowest startup temperature. Continuous operation should range between 60-1000 SUS (10.5-216 cSt) for all temperature ranges.

5

Electrical System

The electrical system is made up of numerous components connected by generic harnesses. Proximity switches provide safety lockouts and influence the operational controls located in the control panel. The lift is operated via an electronic joystick. Body controls, such as the tailgate, are operated via switches located on the in-cab control panel.

Electrical Schematics

Electrical schematics are provided as part of the ALLEY-GATOR™ documentation package located inside the cab.

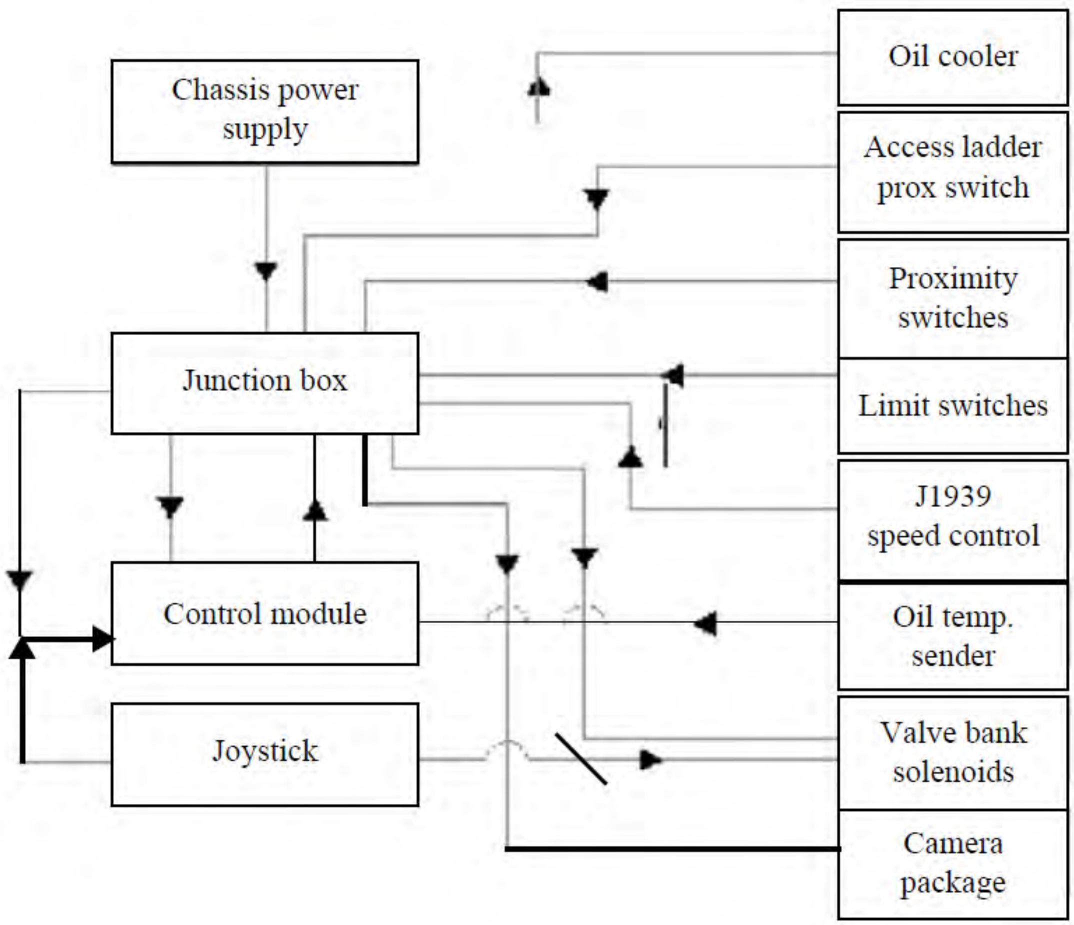
The electrical schematics show how components are wired to each other. These schematics are useful when diagnosing electrical circuits and should be kept for future reference.

Each ALLEY-GATOR™ unit has its own set of electrical schematics based on the options that are installed.

At the end of this chapter you will find a set of electrical schematics which are given as examples and may differ from the schematics found in the cab of your truck. For specific details pertaining to your truck, always refer to the schematics located inside the cab.

The following simplified block diagram of the electrical system (Figure 5-1) may assist you in understanding the electrical system of the ALLEY-GATOR™.

Figure 5-1 Diagram of the electrical system

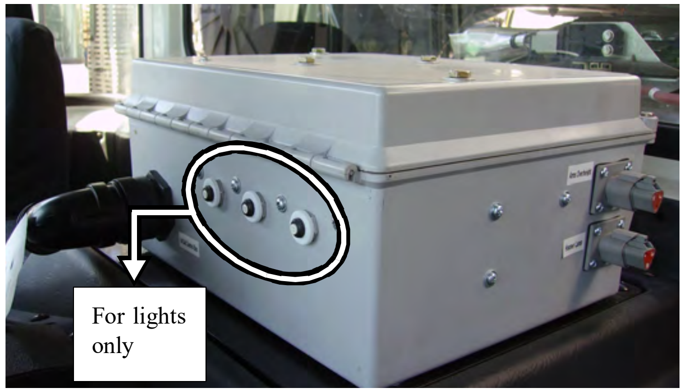


Electrical System Components

Auto-Reset Circuit Breakers

Power for the ALLEY-GATOR™ ASL electrical system is protected by various replaceable automotive type fuses located in the inside junction box. The circuit breakers are mounted on the side of the relay box (see Figure 5-2).

Figure 5-2 Auto-reset circuit breakers



Electrical Junction Box

The ALLEY-GATOR™ junction box is mounted to the underside of the front end of the body. The junction box joins all electrical wiring from the relay box and all electrical wiring from the body of the ALLEY-GATOR™.

Figure 5-3 Electrical junction box



Relay Box

The relay box is located in the cab of the vehicle (see Figure 5-4). The box interior consists of a series of relays, fuses, and connectors that supply the electrical systems for the ALLEY-GATOR™.

Relays: A relay is a series of switches influenced by a common coil but controlled from a remote location, such as a limit switch or proximity switch. Although there are 2 different types of relays they perform the same function. Each relay is labeled in accordance with the operation it controls.

Fuses: There are six fuses installed in the relay box; only three are resetable. All fuses are located at the center of the relay box. The three resetable fuses protect all lights circuits. All fuses are labeled as to the circuit they protect.

Figure 5-4 Relay Box

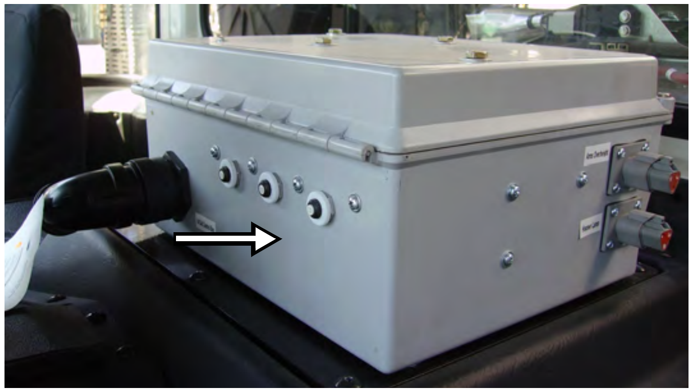
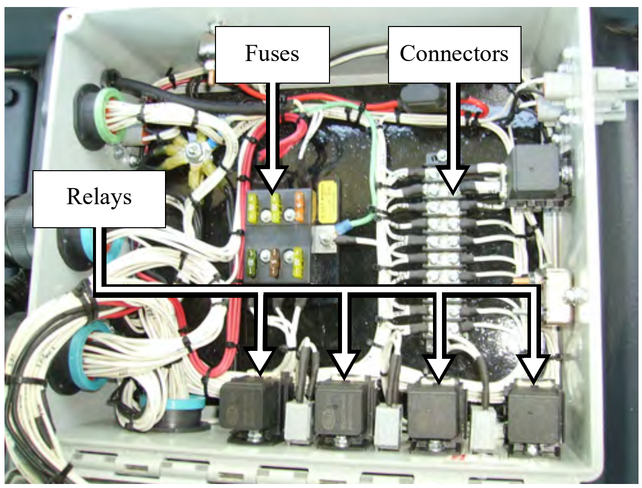


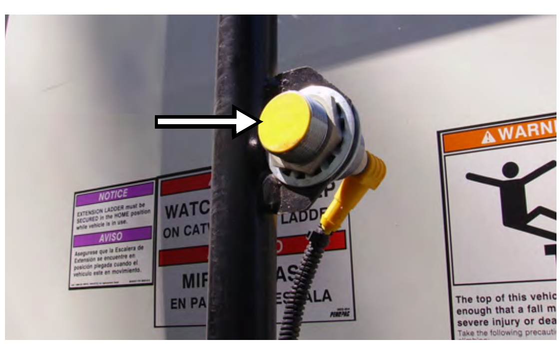
Figure 5-5 Inside relay box



Proximity Switches

Eight standard proximity switches are located on the arm and body of the ASL (9 if a ladder or a crusher panel is installed, 10 if a top door is installed). Proximity switches provide safety lockouts as well as controlling the operational cycle of the pendulum and arm. Refer to "Proximity Switches" on page 53 and "What are Proximity Switches?" on page 54.

Figure 5-6 Ladder proximity switch

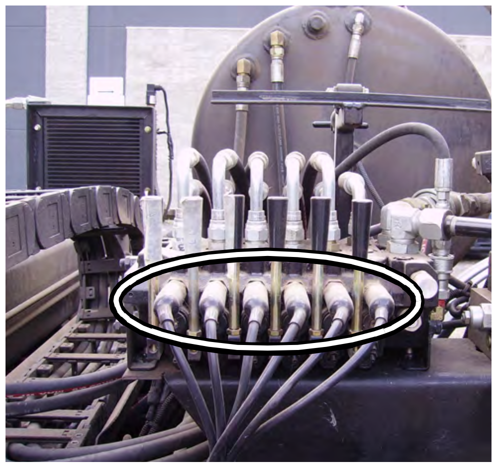


Valve Solenoids

Solenoid valves are devices that use a solenoid to control valve activation. The solenoids are mounted to the directional valves and transmit operator commands to activate the mechanical spools.

A solenoid is composed of a wire coil and a movable plunger that rests against the coil. An actuating magnetic field is created when current is applied to the coil. The solenoid is used as a switch or control for the valves. Solenoid valves are electro-mechanical devices that use a solenoid to control valve actuation. Electrical current is supplied to the solenoid coil, and the resulting magnetic field acts upon the plunger, whose resulting motion actuates the valve.

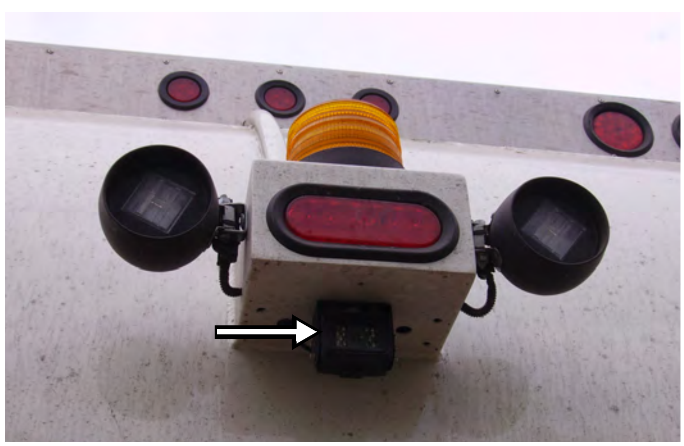
Figure 5-7 Valve solenoids



External Lights and Vision Equipment

Basic lighting requirements in accordance with FMVSS are fitted as standard equipment to your ALLEY-GATOR™ ASL. However, there are many additional options available that may be added to your vehicle. Consult with the OEM/Labrie Enviroquip Group for more information.

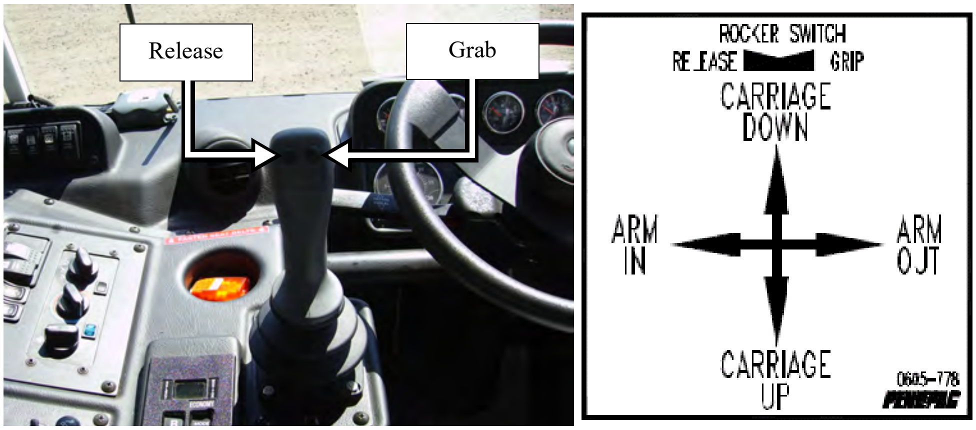
Figure 5-8 Rear view camera



Joystick

The electronic joystick is used to control all slide, arm and grabber functions. The slide and arm functions are variable for speed and control. The grab and release thumbswitches are on-off only switches located on the top of the control lever.

Figure 5-9 Joystick



Harnesses

Harnesses connect all electrical components on your ALLEY-GATOR™ Automated Side Loader. The harnesses are generic and may contain wires and plugs that are not utilized.

Proximity Switches

Proximity switches act as remote electrical on/off switches and must be adjusted properly.

Figure 5-10 and Figure 5-11 show the location of the proximity switches that are usually installed on the ALLEY-GATOR™. The number of switches may vary, depending on the vehicle's equipment.

Figure 5-10 Location of proximity switches (curbside)

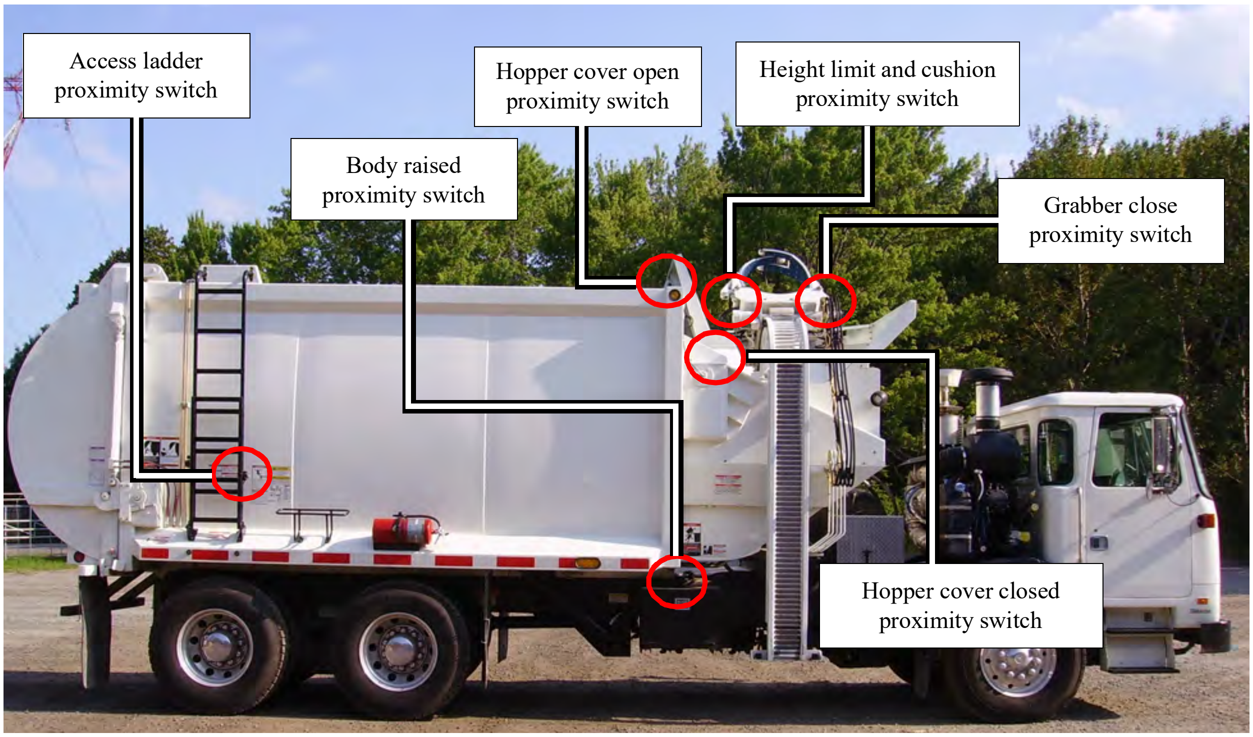
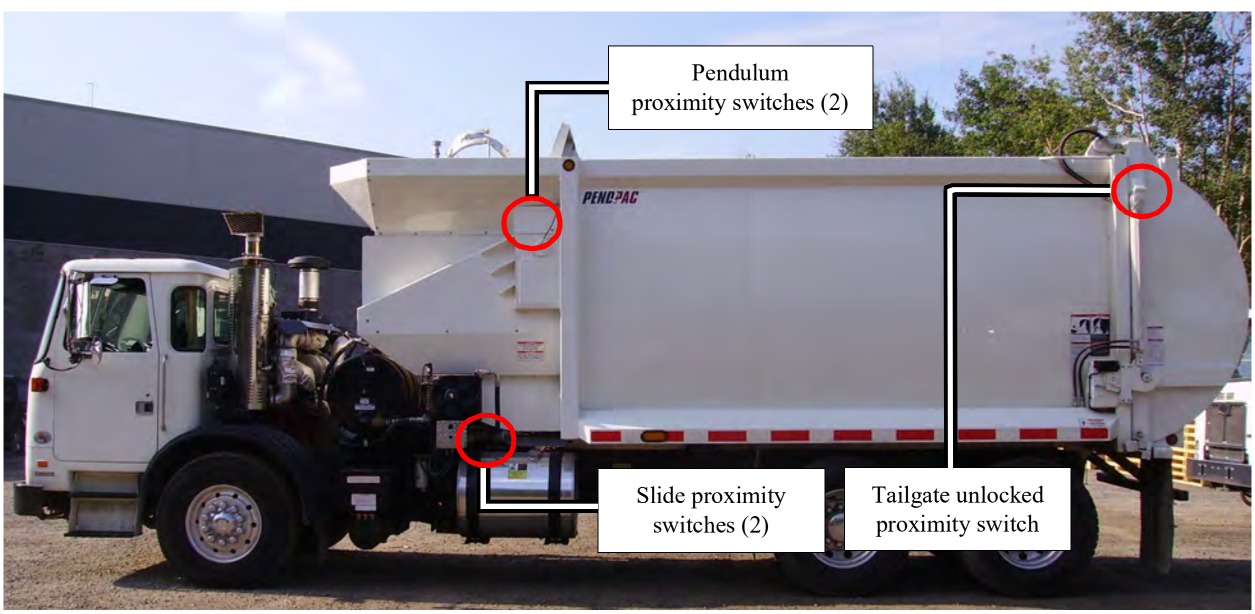


Figure 5-11 Location of proximity switches (streetside)



What are Proximity Switches?

Proximity switches utilize an electronic sensor to detect when solid material is within a certain distance of the switch face. Proximity switches detect a proximity distance of approximately 3/8" to 1/2", plus or minus 1/8". The switches are constructed of stainless steel with a detachable wire connector.

Figure 5-12 Proximity switch



The proximity switches used to influence the operational controls of the arm and pendulum are known as *shielded proximity switches*. These switches will only detect objects in front of the switch, and will not detect objects beside the switch. When the proximity switch detects a solid object within the range of the switch a small light illuminates at the connector end.

If adjustment of a *shielded proximity switch* fails to correct the switch function, the switch shielding may have failed. This cannot be repaired and the switch must be replaced. Refer to pages regarding proper adjustment procedures for each individual switch.

NOTE: Proximity switches MUST function properly. Serious equipment damage may occur if you operate your vehicle with improperly adjusted or faulty switches. REPLACE faulty ALLEY-GATOR™ Side Loader proximity switches with shielded proximity switches only.

NOTE: In order to effectively test a proximity switch you must use a multimeter. Proximity switches have a low amperage and will not effectively test with a simple test-light.

Access Ladder Extension Proximity Switch

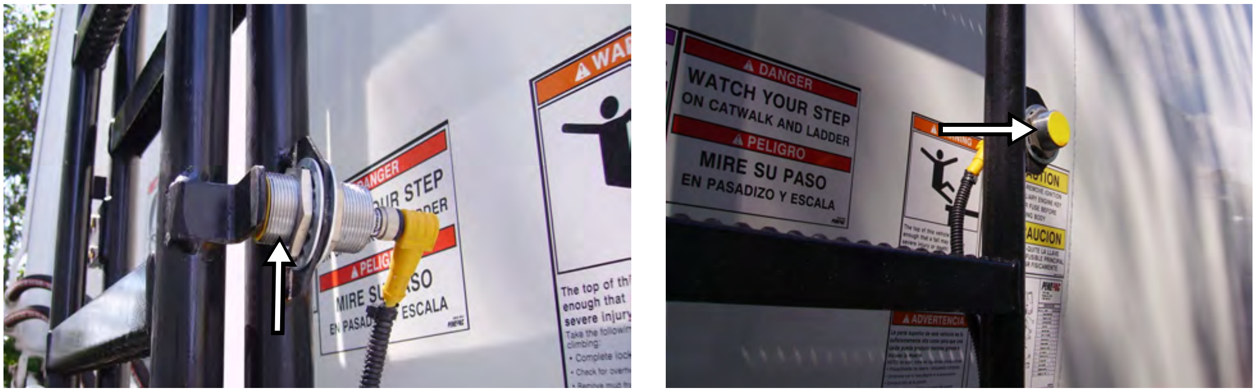
The *access ladder extension proximity switch* is located on the bottom right hand corner of the ladder (see Figure 5-13).

This proximity switch is installed to shut down power to the pump switch when the ladder is in use. This disables all hydraulic functions.

Visually confirm activation of the proximity switch warning message (on the MDM display screen [see Figure 2-15]) and buzzer daily prior to operating the ALLEY-GATOR™ Side Loader.

NOTE: Do not operate the ALLEY-GATOR™ Side Loader if this proximity switch is not functioning.

Figure 5-13 Access ladder proximity switch, ladder in "home" position, left; ladder in deployed position, right



How to Adjust

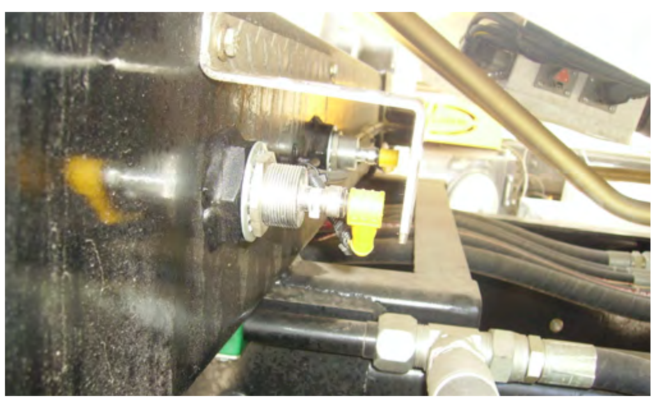
To adjust the access ladder proximity switch:

1. RETURN ladder to "home" position.
2. COMPLETE lockout/tagout procedure (see *Lockout/Tagout Procedure* on page 21).
3. LOOSEN the proximity switch mounting nuts. Slide the switch forward or backward in the mount to achieve a gap of approximately ¼" with the tab.
4. TIGHTEN the proximity switch nuts.
5. TEST and repeat steps 3 and 4 as necessary.

Slide Proximity Switch

The *slide proximity switch* is mounted to the slide tube frame close to the streetside cooler fan.

Figure 5-14 Slide proximity switch



The *slide proximity switch* is normally open. When the slide is fully RETRACTED, that is, in the 'HOME' or 'PARKED' position, this switch is ACTIVATED, erasing the 'Arm Not Parked' warning message from the MDM display screen and shutting off the buzzer.

When the slide moves away from the 'HOME' or 'PARKED' position, the switch is DEACTIVATED, which triggers the *arm not parked warning message* on the MDM display screen as well as the buzzer. This is done so that a faulty switch will always ACTIVATE the warning message and buzzer.

NOTE: Proper function of this switch is essential in order to indicate to the driver with a warning message and an audible alarm that the vehicle is in a dangerous position while moving in excess of 7 mph (11 km/h). In this condition, only the retract functions for the arm, slide and grabber will operate. The overwidth condition must be rectified immediately! Serious injury and/or damage can occur if the vehicle is operated in an overwidth condition.

The *slide proximity switch* works with the *height limit proximity switch* (see *Height Limit and cushion Proximity Switch* on page 57) to lock out the arm UP function when the arm reaches a certain height while the slide is extended. This prevents dumping refuse containers outside of the hopper. The *slide proximity switch* also provides a signal to the control module on its retract stroke to cushion the slide when it reaches the fully retracted position.

Figure 5-15 Slide retracted and in "home" position



How to Adjust

To adjust the slide proximity switch:

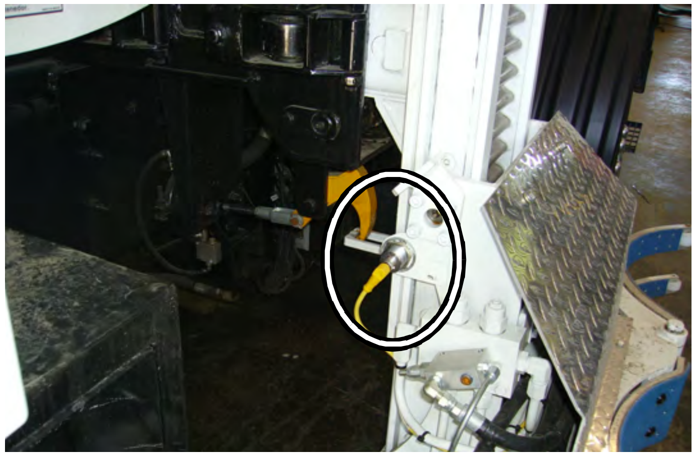
1. RETURN the slide to the 'HOME' position.
2. COMPLETE lockout/tagout procedure (see *Lockout/Tagout Procedure* on page 21).
3. LOOSEN the proximity switch mounting nuts. Slide the switch forward or backward in the mount to achieve a gap of approximately ¼" with the slide trigger.
4. TIGHTEN the proximity switch mounting nuts.
5. TEST and repeat steps 3 and 4 as necessary.

NOTE: Adjustment of the switch too close to the detected object may result in damage to the switch during operation, and result in switch failure. Visually confirm activation of the switch warning message and buzzer daily prior to operating the ALLEY-GATOR™ Side Loader.

Height Limit and cushion Proximity Switch

The *height limit and cushion proximity switch* is mounted on the left hand side of the lift cradle.

Figure 5-16 Height limit proximity switch



The *height limit and cushion proximity switch* is normally open. When the arm is at or near the 'HOME' or 'PARKED' position, the switch is ACTIVATED. When the arm is RAISED approximately 7 feet (2.13 m) this switch is DEACTIVATED, opening the contacts which are connected to the control module. This disables the arm UP function if the slide proximity switch is not triggered (slide is fully 'HOME' or 'PARKED').

The *height limit and cushion proximity switch* also sends a signal to the control module to eliminate the grabber from opening while dumping, preventing the container from being dumped into the hopper. It also sends reference, through the control module, for the cushion to operate and control the speed of the arm coming in and out of the hopper.

How to Adjust

To adjust the height limit and cushion proximity switch:

1. RAISE the lift until the arm is almost halfway extended.
2. COMPLETE lockout/tagout procedure (see *Lockout/Tagout Procedure* on page 21).
3. LOOSEN the proximity switch mounting nuts. Slide the switch forward or backward in the mount to achieve a gap of approximately ¼" with the height limit trigger.
4. TIGHTEN the proximity switch nuts.
5. TEST and repeat steps 1 through 4 as necessary.

NOTE: Adjustment of the switch too close to the detected object may result in damage to the switch during operation, and result in switch failure. Visually confirm activation of the switch warning message (on the MDM display screen) and buzzer daily prior to operating the ALLEY-GATOR™ Side Loader.

Grabber Close Proximity Switch

The *grabber close proximity switch* is mounted on the right hand side of the lift cradle.

Figure 5-17 Grabber close proximity switch



The *grabber close proximity switch* is normally open. When the arm is RAISED the switch is ACTIVATED and the contacts close. The *grabber close proximity switch* also simultaneously signals the bin counter to advance another digit (only with auto grip and cycle bin counter option).

NOTE: Proper function of this switch is necessary to prevent damage to the vehicle and/or the lift.

How to Adjust

To adjust the grabber close proximity switch:

1. RAISE the arm until the grabber close proximity switch is over the grabber close proximity trigger.
2. COMPLETE lockout/tagout procedure (see *Lockout/Tagout Procedure* on page 21).
3. LOOSEN the proximity switch mounting nuts. Slide the switch forward or backward in the mount to achieve a gap of approximately ¼” with the tab.
4. TIGHTEN the proximity switch nuts.
5. TEST and repeat steps 1 through 4 as necessary.

NOTE: Adjustment of the switch too close to the detected object may result in damage to the switch during operation, and result in switch failure. Visually confirm activation of the switch warning message (on the MDM display screen) and buzzer daily prior to operating the ALLEY-GATOR™ Side Loader.

Pendulum Proximity Switches

Both the *pack and return proximity switches* are mounted on a plate above the pendulum arm pivot at the rear of the hopper bowl on the streetside of the vehicle. These proximity switches are protected by a removable cover (see Figure 5-19).

Figure 5-18 Pack and return proximity switches

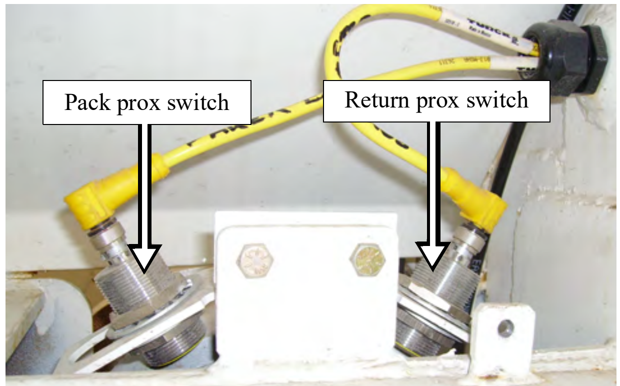
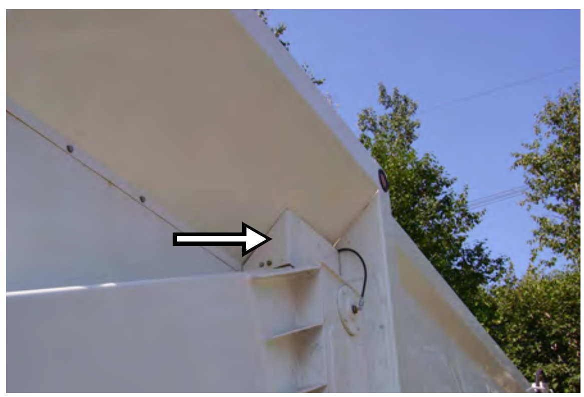


Figure 5-19 Removable cover



The *pack and return proximity switches* are normally open. These switches control the AUTOPACK cycle as follows:

- The *pack proximity switch* is triggered by a tab mounted to the pendulum arm pivot. When the pendulum travels to the rear of the hopper bowl, the tab ACTIVATES the proximity switch and the contacts close. This SENDS a signal to the control module, which then sends a signal to the pendulum to BEGIN the PACKING sweep.
- The *return proximity switch* is triggered by a tab mounted to the pendulum arm pivot. When the pendulum travels to the front of the hopper bowl, the tab ACTIVATES the proximity switch and the contacts close. This SENDS a signal to the control module, which then sends a signal to the pendulum to BEGIN the RETURN sweep.

Adjusting Pack and Return Proximity Switches

Figure 5-20 Proper position to adjust pendulum proximity switches



NOTE: This adjustment is carried out with the system 'LIVE', that is, the pump is ON and the PENDULUM is in OPERATION. *Two persons are required to make this adjustment,* one in the cab to operate the controls and a second to adjust the proximity switches from the outside of the hopper bowl.

Danger! Extreme caution must be exercised when completing this adjustment as falling into the hopper while the pendulum is in operation will almost certainly result in death.

To adjust the pack and return proximity switches:

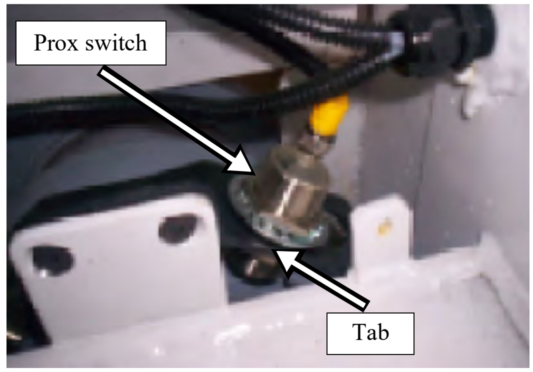
1. REMOVE the protective cover (see Figure 5-19).
2. LOOSEN the mounting nuts for the *pack proximity switch* (this is the switch closest to the body [see Figure 5-18]) and move it fully FORWARD in the mounting slot.
3. Operate a MANUAL pack cycle and move the pendulum fully to the rear of the hopper bowl.
4. ADJUST the proximity switch within the slot until the tab is in front of the proximity switch face.

   Note that the proximity switch indicator light will be ON. ENSURE the proximity switch gap is approximately ¼".
5. TIGHTEN the proximity switch mounting nuts.
6. LOOSEN the mounting nuts for the *return proximity switch* (this is the switch farthest from the body [see Figure 5-18]) and move it fully forward in the mounting slot.
7. Operate a MANUAL return cycle and move the pendulum fully to the front of the hopper bowl.
8. ADJUST the proximity switch within the slot until the tab is in front of the proximity switch face (see Figure 5-21).

   Note that the proximity switch indicator light will be ON. ENSURE the proximity switch gap is approximately ¼".
9. TIGHTEN the proximity switch mounting nuts.
10. INITIATE an AUTOPACK cycle and observe the sweep of the pendulum.

11. If no more adjustment is needed put back the protective cover.

Figure 5-21 Return proximity switch and tab



In the PACK MODE, the pendulum should complete a full sweep and enter the body chamber by several inches without the cylinders bottoming out (fully stroked). Repeat steps 2 through 5 as necessary.

In the RETURN MODE, the pendulum should travel fully forward in the bowl and stop before the cylinders bottom out (fully retracted). Repeat steps 6 through 9 as necessary.

NOTE: The auto-pack cycle should be checked with the engine running at 1500 RPM. The pendulum should transition smoothly between the PACK and RETURN cycles with no banging at the top and bottom of the motion.

Cycle Times	
At idle	18 seconds
At 1500 RPM	12 seconds

Tailgate Unlocked Proximity Switch

The *tailgate unlocked proximity switch* is located on the streetside of the tailgate near the rod-side cylinder head (see Figure 5-22).

This switch gets triggered when the cylinder casing is sufficiently near the switch head. This occurs when the cylinder is fully retracted.

When the tailgate is unlocked/open, the tailgate cylinder is partially/fully extended and no triggering of the proximity switch occurs; the cylinder having moved downward away from the switch[1]. This triggers the *tailgate unlocked warning message* on the MDM display screen (see Figure 2-15) and the warning buzzer inside the cab. The *tailgate unlocked proximity switch* also activates the backup alarm.

1. **The first thing the tailgate cylinder does when the operator presses and holds the TAILGATE UP switch is to unlock the tailgate, resulting in the cylinder head moving away from the proximity switch, thus making triggering no more possible.**

When the tailgate is locked/closed, the tailgate cylinder is fully retracted and triggering of the proximity switch occurs; the cylinder having moved upward toward the switch[1]. When the switch is triggered, the warning buzzer and backup alarm stop sounding. This also erases the *tailgate unlocked warning message* from the MDM display screen (see Figure 2-15), and packing operation can resume.

However, some troubles may occur if the *tailgate unlocked proximity switch* is out of adjustment. For example, the tailgate is locked but the in-cab buzzer is still sounding or the *tailgate unlocked warning message* is not showing on the MDM display screen (see Figure 2-15) while the tailgate is still open. In such cases, adjusting the *tailgate unlocked proximity switch* is required.

Figure 5-22 Location of the tailgate unlocked proximity switch

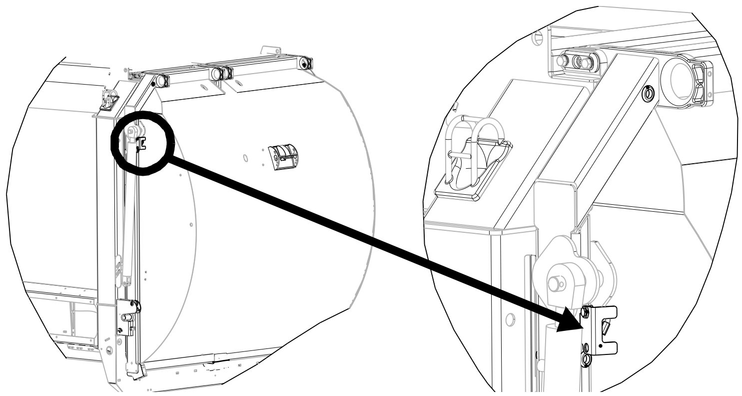
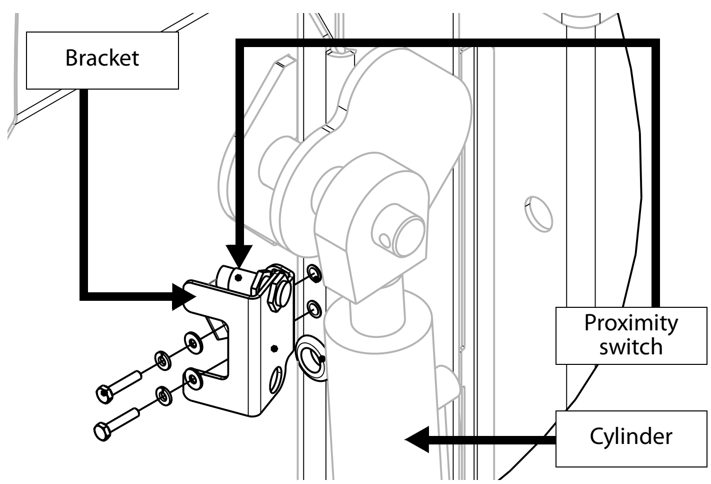


Figure 5-23 Proximity switch support assembly



To adjust the *tailgate unlocked proximity switch*:

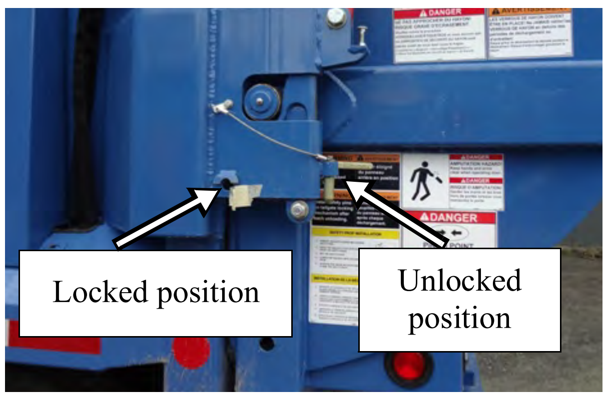
1. RELIEVE pressure on the tailgate pins by pressing the lower part of the “Rear Door” button on the MDM module.

   Do not forget to press the “Doors Enable” button at the same time.
2. MOVE both tailgate pins from the locked position to the unlocked position (see Figure 5-24).
3. LOOSEN the mounting nuts on each side of the proximity switch bracket (see Figure 5-25).

1. **The last thing the tailgate cylinder does when the operator presses and holds the TAILGATE DOWN switch is to lock the tailgate, resulting in the cylinder head moving closer to the proximity switch, thus making triggering possible.**

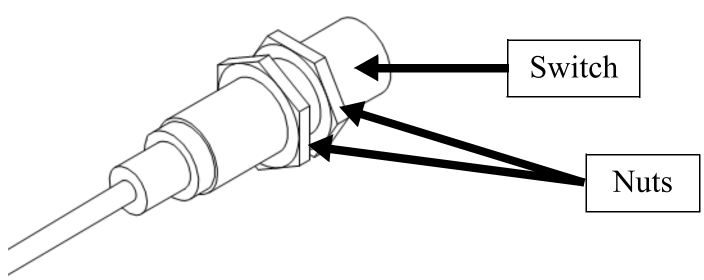
4. SLIDE the switch forward or backward in the mount to achieve a gap of approximately ¼” with the cylinder casing.
5. TIGHTEN the proximity switch nuts.
6. OPEN the tailgate.
7. EXAMINE that the *tailgate unlocked warning message* appears on the MDM display screen and that the buzzer and backup alarm sound immediately after the switch lost contact with the target.
8. CLOSE the tailgate completely.
9. EXAMINE that the *tailgate unlocked warning message* has disappeared and that both the buzzer and the backup alarm are silent.
10. REPEAT steps 3, 4 and 5 as necessary.
11. If no more adjustment is needed, PUT both tailgate pins back in the locked position.

Figure 5-24 Tailgate pin



NOTE: The *tailgate unlocked proximity switch* also serves as a lockout function for the *body up/down switch*. The body is prevented from being raised from inside the cab unless the tailgate is open.

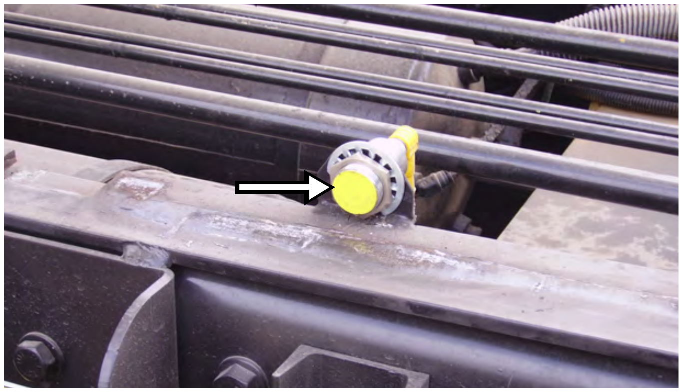
Figure 5-25 Proximity switch



Body Raised Proximity Switch

The *body raised proximity switch* is center mounted on the curbside chassis frame rail.

Figure 5-26 Body raised proximity switch



The *body raised proximity switch* is not ACTIVATED when the main seal of the body loses contact with the chassis. The proximity switch then triggers the *body raised warning message* to appear on the MDM display screen (see Figure 2-15). Upon returning the body to the seated position, the *body raised proximity switch* is ACTIVATED and the *body raised warning message* is disappeared from the MDM display screen.

How to Adjust

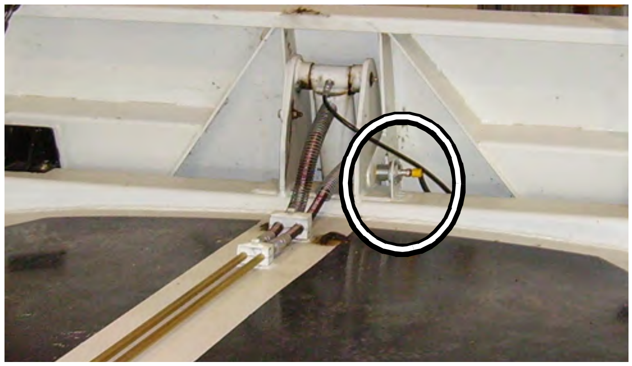
To adjust the *body raised proximity switch*:

1. RAISE the body and position the hoist safety prop. Refer to “Stabilizing a Hoisted Body” on page 25.
2. COMPLETE the Lockout/Tagout Procedure (refer to “Lockout/Tagout Procedure” on page 21).
3. LOOSEN the proximity switch mounting nuts. Slide the switch forward or backward in the mount to achieve a gap of approximately ¼” with the tab.
4. TIGHTEN the proximity switch nuts.
5. START the side loader and switch ON the hydraulic pump.
6. RETURN the hoist safety prop to the resting position and LOWER the body.
7. RAISE the body again and CHECK that the *body raised warning message* appears on the MDM display screen (see Figure 2-15) and the buzzer sounds as soon as the body is not properly seated on the chassis.
8. LOWER the body until contact with the chassis is made. CHECK that the *body raised warning message* disappears and buzzer is silent only when the body is properly seated on the chassis.
9. TEST and REPEAT steps 1-4, if necessary.

Hopper Cover Proximity Switch (optional)

This is ***an optional switch*** and may not be mounted on your vehicle, otherwise the *hopper cover proximity switch* is mounted on the body roof next to the hopper cover cylinder.

Figure 5-27 Hopper cover proximity switch



The *hopper cover proximity switch* disables the lift from proceeding in an upward motion should the hopper cover not be completely open. This proximity switch also triggers a *hopper cover warning message* to appear on the MDM display screen.

How to Adjust

To adjust the hopper cover proximity switch:

1. Fully OPEN the hopper cover.
2. COMPLETE the Lockout/Tagout Procedure (refer to “Lockout/Tagout Procedure” on page 21).
3. LOOSEN the proximity switch mounting nuts.
4. SLIDE the switch forward or backward in the mount to achieve a gap of approximately ¼” with the tab of the hopper cover.
5. TIGHTEN the proximity switch nuts.
6. TEST the operation of the switch and REPEAT the steps as necessary.

Crusher Panel Up Proximity Switch (optional)

The *crusher panel up proximity switch* (see Figure 5-28) disables the lift from proceeding in an upward motion should the crusher panel not be completely raised. This proximity switch also triggers a *crusher panel warning message* to appear on the MDM display screen.

Figure 5-28 Crusher panel up proximity switch



How to Adjust

NOTE: The crusher panel has to be lowered to access this proximity switch.

To adjust the crusher panel up proximity switch:

1. Fully LOWER the crusher panel.
2. COMPLETE the Lockout/Tagout Procedure (refer to “Lockout/Tagout Procedure” on page 21).
3. ENTER the hopper.
4. LOOSEN the proximity switch mounting nuts.
5. SLIDE the switch forward or backward in the mount to achieve a gap of approximately ¼” with the tab of the crusher panel.
6. TIGHTEN the proximity switch nuts.
7. EXIT the hopper.
8. TEST the operation of the switch and REPEAT the steps as necessary.

IQAN Electronic Controller ID Tags

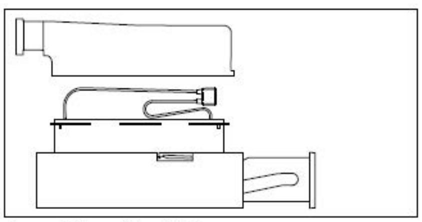
Labrie Alley-Gator bodies are equipped with the Parker IQAN electronic controller system. This system uses ID tags to designate the address for each module that is communicating on the Can-Bus network.

Each module will have a specific address, enabling the master display module (MDM) to communicate with the other modules via the Can-Bus network. When operating, the system distinguishes between different modules by first verifying the type and secondly, through the module specific address determined by the ID tag.

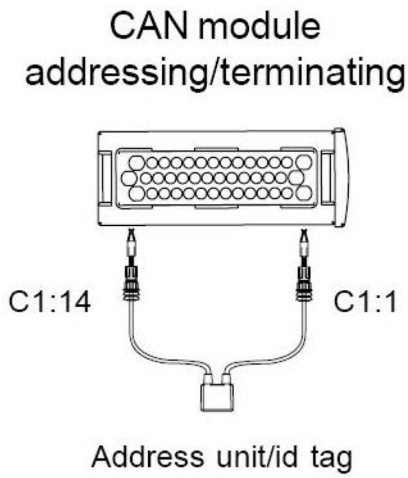
The ID tag is placed in the wire harness connector for each module. The tag is inserted between pins 1 and 14 of the connector and is located under the connector cover.

When a “module disconnected” warning is displayed, it could be due to the following:

- No power/ground to the module
- ID tag is broken or missing
- Break in Can-Bus
- Failed Module

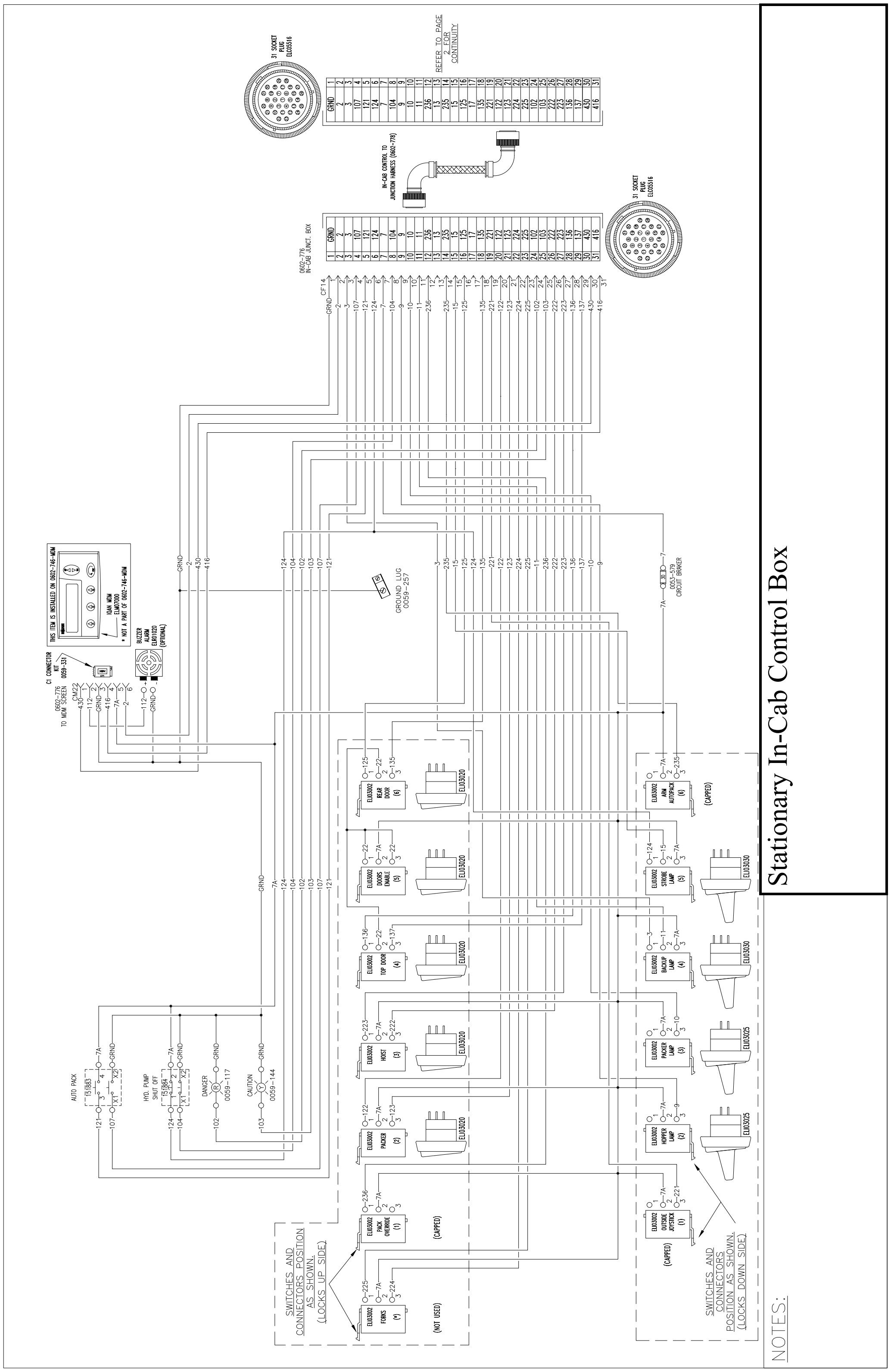


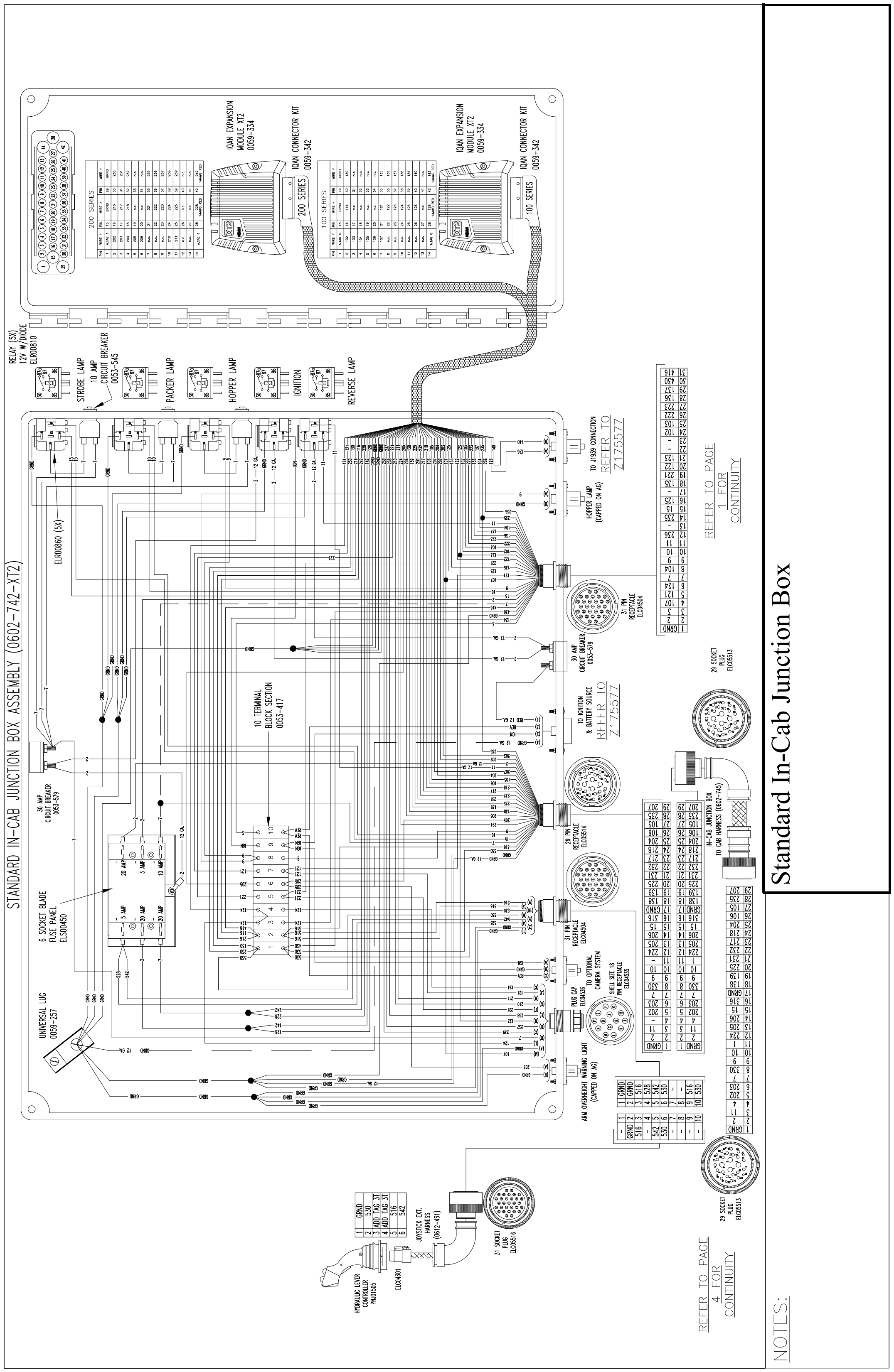
Assembling of the Id-Tag.



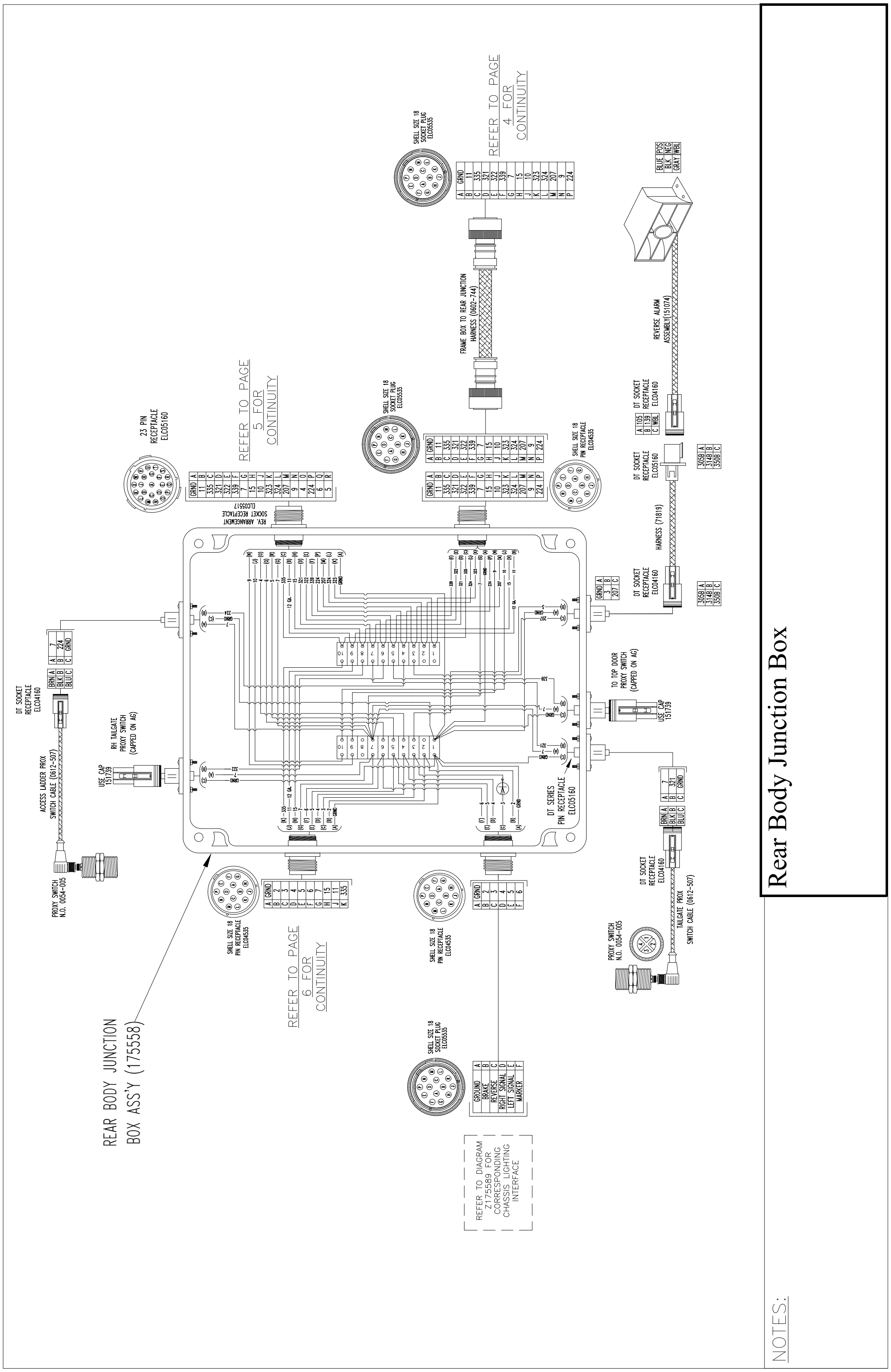


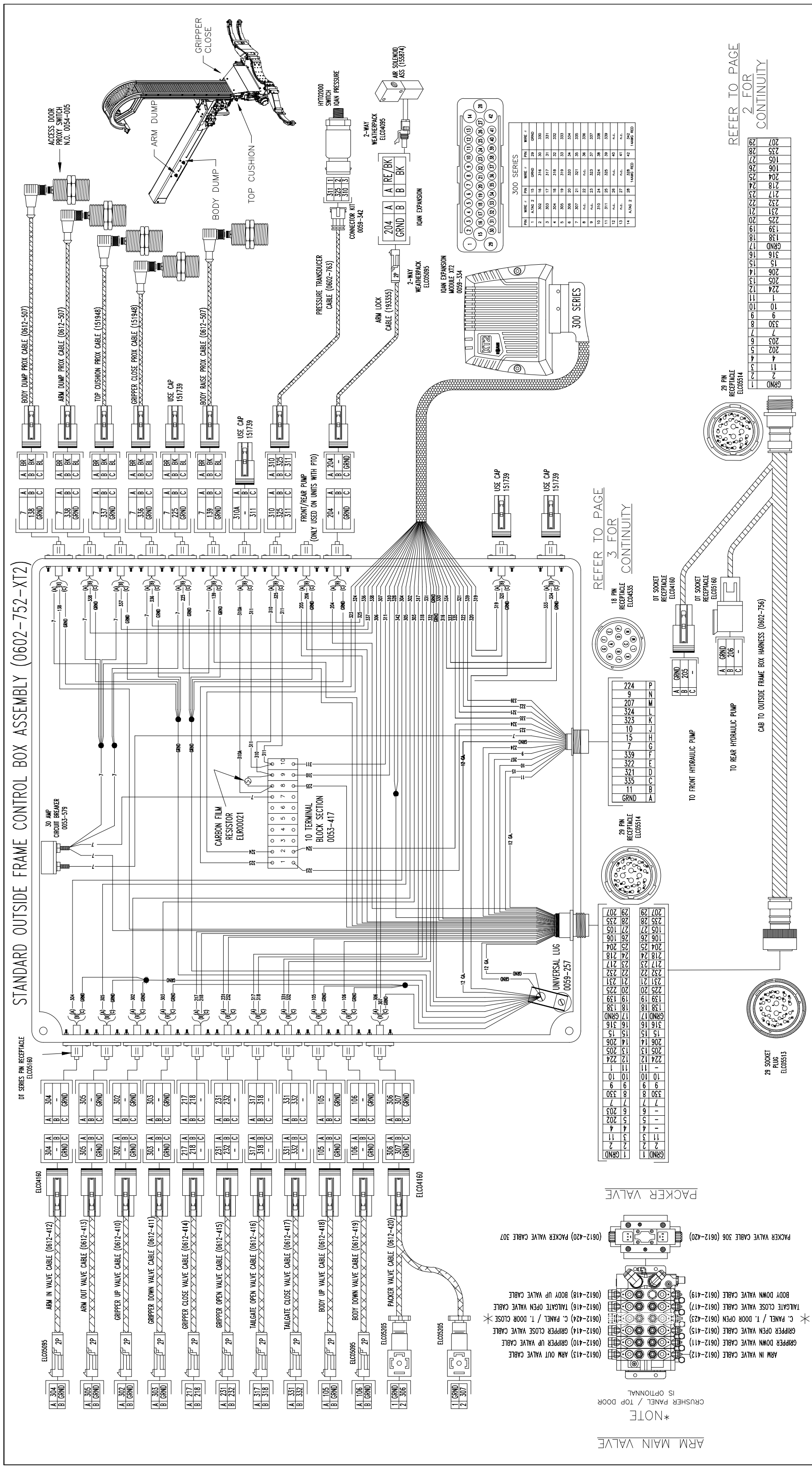
Electrical System Schematics





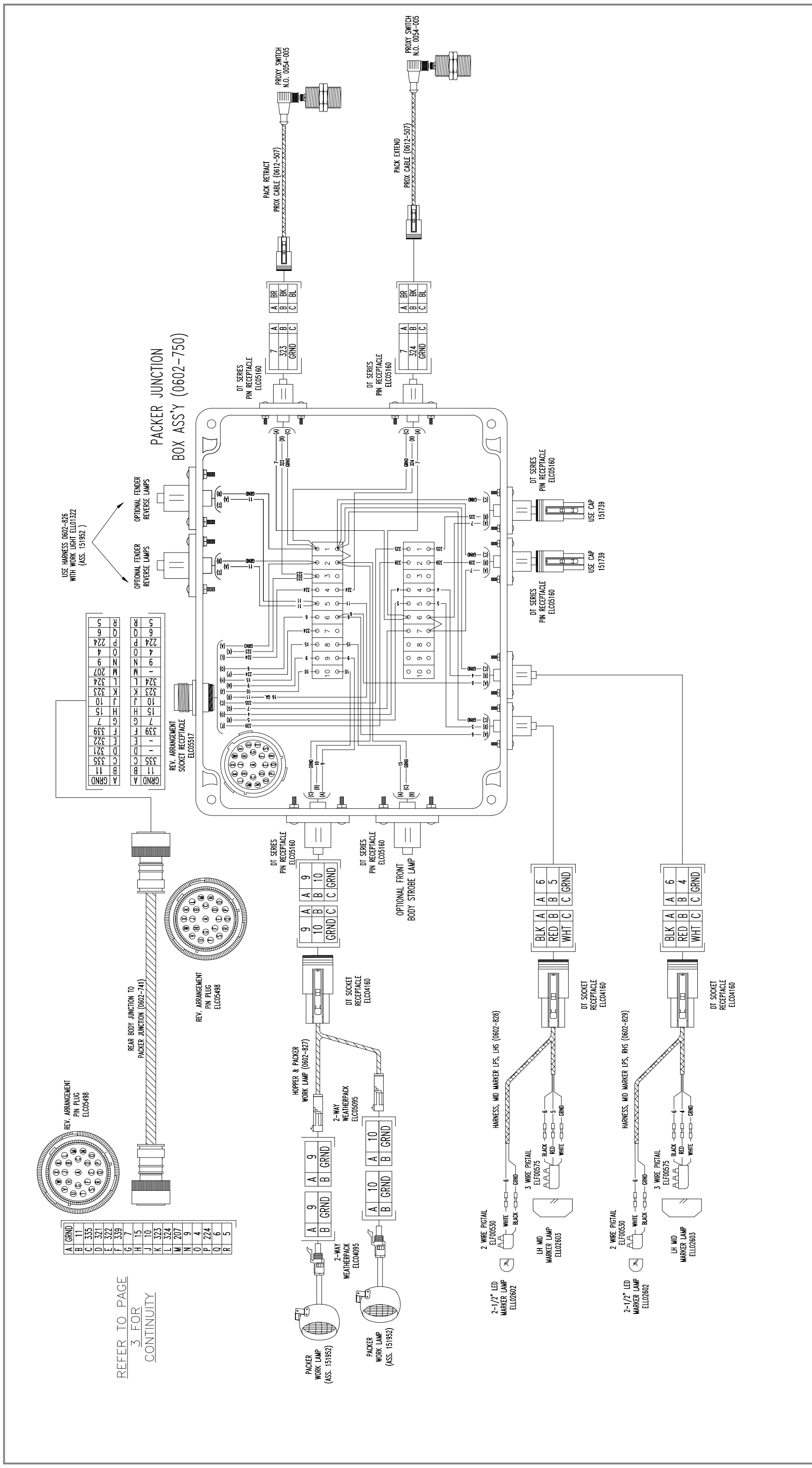
Standard In-Cab Junction Box


Rear Body Junction Box
REAR BODY JUNCTION BOX ASS'Y (175558)
REFER TO PAGE 5 FOR CONTINUITY
REFER TO PAGE 4 FOR CONTINUITY
REFER TO PAGE 6 FOR CONTINUITY
REFER TO DIAGRAM Z175589 FOR CORRESPONDING CHASSIS LIGHTING INTERFACE
FRAME BOX TO REAR JUNCTION HARNESS (0602-744)
REVERSE ALARM ASSEMBLY(151074)
DT SERIES PIN RECEPTACLE ELC05160
TO TOP DOOR PROXY SWITCH (CAPPED ON AG)
RH TAILGATE PROXY SWITCH (CAPPED ON AG)
ACCESS LADDER PROX SWITCH CABLE (0612-507)
TAILGATE PROX SWITCH CABLE (0612-507)
PROXY SWITCH N.O. 0054-005
USE CAP 151739
NOTES:

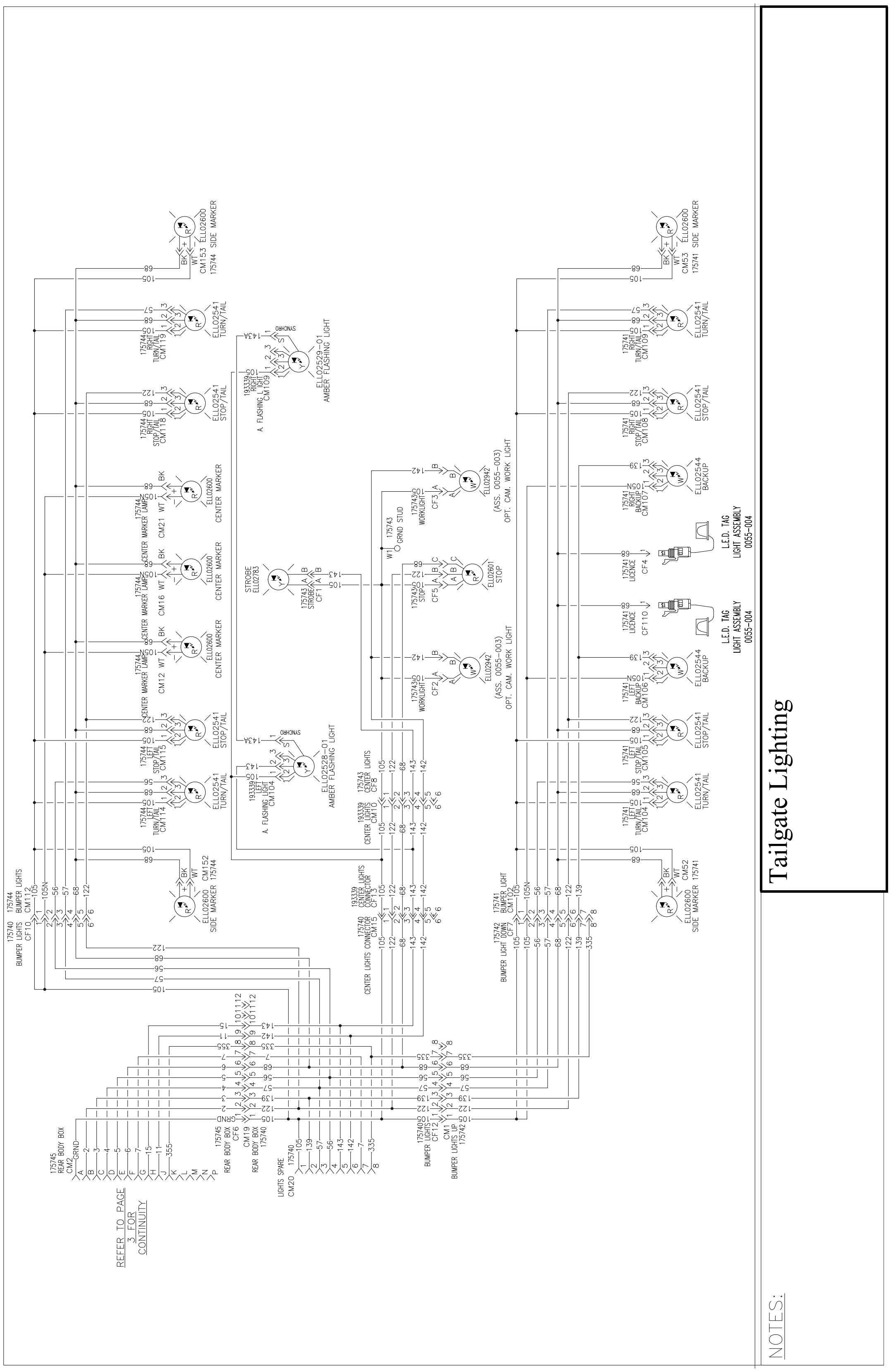


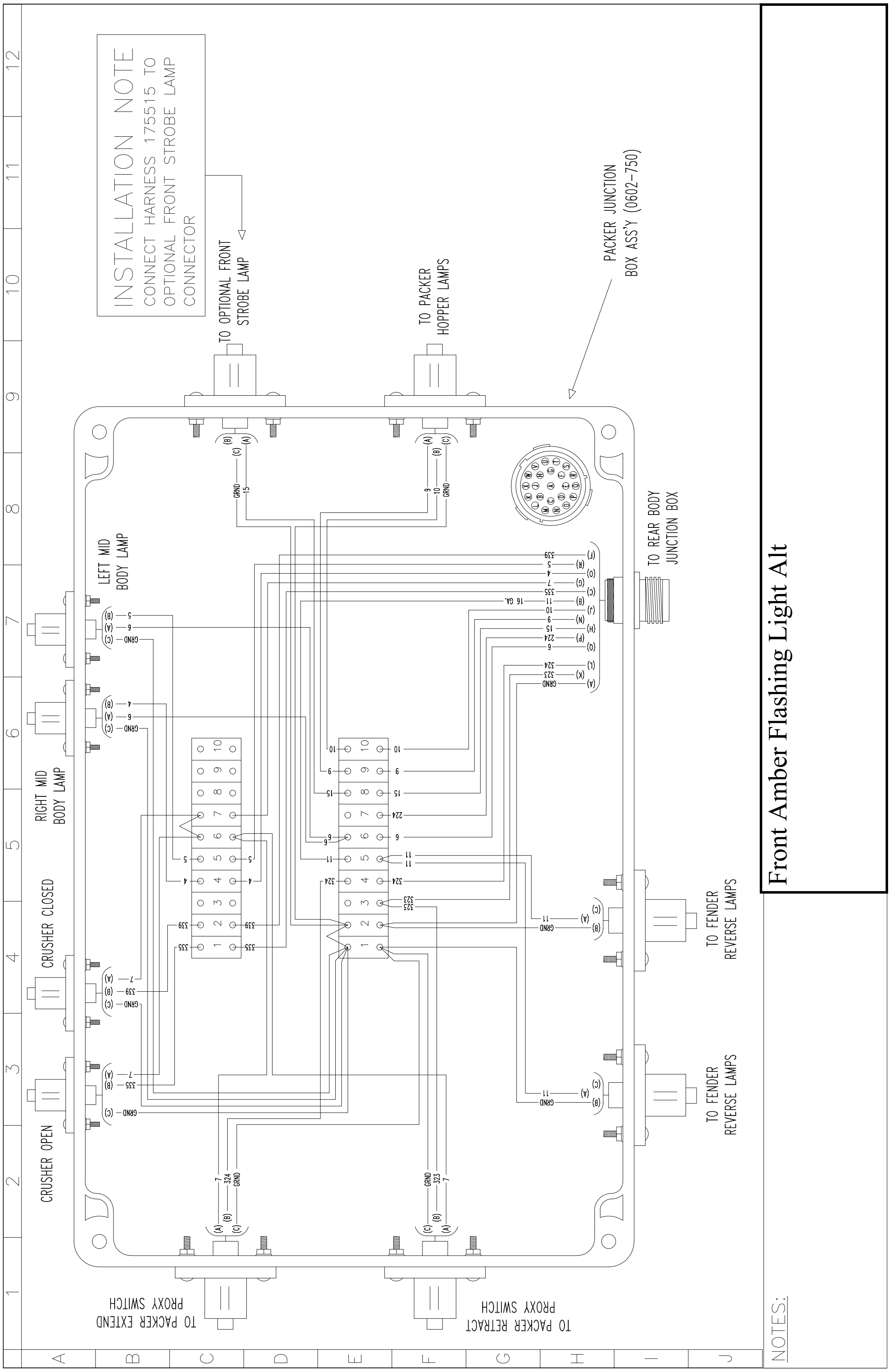
Standard Outside Frame Control Box

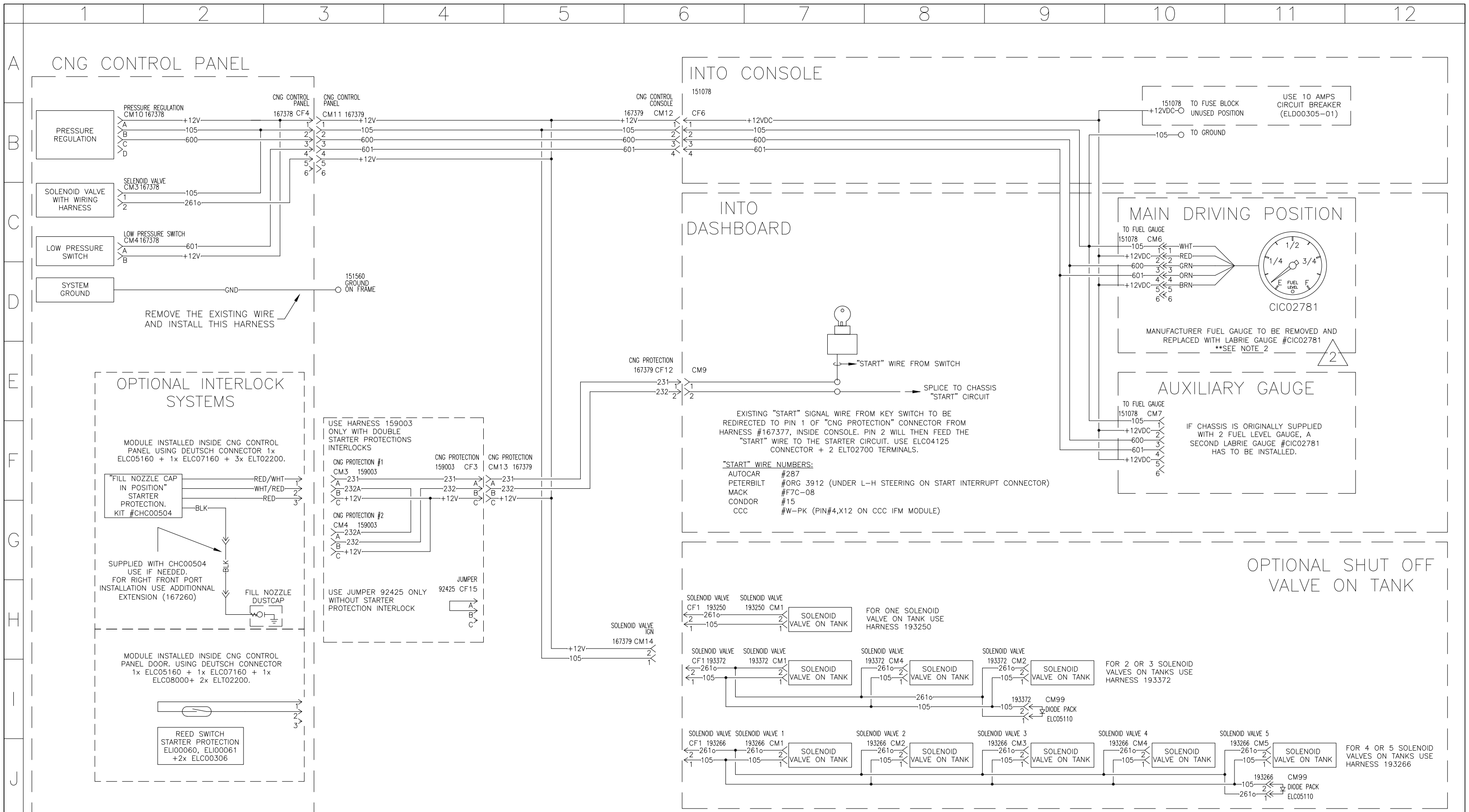
NOTES:



Packer Junction


Tailgate Lighting
NOTES:
REFER TO PAGE 3 FOR CONTINUITY
L.E.D. TAG LIGHT ASSEMBLY 0055-004
AMBER FLASHING LIGHT
OPT. CAM. WORK LIGHT
SIDE MARKER
CENTER MARKER
STOP/TAIL
TURN/TAIL
BACKUP
STOP


INSTALLATION NOTE
CONNECT HARNESS 175515 TO OPTIONAL FRONT STROBE LAMP CONNECTOR
TO OPTIONAL FRONT STROBE LAMP
TO PACKER HOPPER LAMPS
PACKER JUNCTION BOX ASS'Y (0602-750)
TO REAR BODY JUNCTION BOX
LEFT MID BODY LAMP
RIGHT MID BODY LAMP
CRUSHER CLOSED
CRUSHER OPEN
TO FENDER REVERSE LAMPS
TO FENDER REVERSE LAMPS
TO PACKER EXTEND PROXY SWITCH
TO PACKER RETRACT PROXY SWITCH
NOTES:
Front Amber Flashing Light Alt



CNG Control Labrie Without Multiplex

NOTES:

1. REMOVE THE ORIGINAL FUEL GAUGE AND REPLACE IT WITH FUEL GAUGE #CIC02781. MAKE SURE TO ISOLATE THE REMAINING PLUG TO PROTECT SHORT CIRCUIT.
2. IF CELLING MOUNTED USE HARNESS 193465

6

Hydraulic System

Maintenance on the hydraulic system must be carefully and regularly done. The hydraulic system supports most of the functions of the ALLEY-GATOR™ body.

As with all hydraulic systems, it may be necessary to periodically check and adjust the pressure relief settings. It may be that a major hydraulic component has been changed, that the vehicle is not performing in terms of payload, or that the vehicle has recently been put into service and the system requires adjustment following a run-in period.

Danger!

Always lock out and tag out the vehicle (see *Lockout/Tagout Procedure* on page 21) when inspecting or performing maintenance on the vehicle.

Danger!

Human skin can be easily penetrated by high pressure oil (2000 psi and above). Failure to take appropriate safety precautions may result in serious injury or death.

Danger!

Because of extreme overhead dangers, equipment must be properly supported when servicing sections on the hydraulic system.

General Maintenance

To keep the hydraulic system efficient and reliable, the following care must be taken:

- Every day, check hydraulic lines and connections are not leaking. Correct if necessary.
- Inspect the pump for leaks or unusual noise.
- When maintenance is carried out, protect all hoses, fittings, pipes, or any other ingress points from dirt that would eventually get into the oil. Plug hoses that are not connected.

- Inspect the hydraulic system at lease once a month, and adjust pressure if necessary (see *Hydraulic Pressure Adjustments* on page 85).
- For new vehicles, change the return filter element after 50 hours of use, and twice a year afterwards or when the pop-up indicator signals the need for it to be changed (see Figure 3-1), whichever comes first (see *Return line Filter Element Replacement Procedure* on page 32).
- For new vehicles, change the in-line pressure filter after 50 hours of use, and twice a year afterwards or when the pop-up indicator signals the time for its replacement (see Figure 3-2), whichever comes first (see *In-Line Pressure Filter Replacement Procedure* on page 33).
- Hydraulic oil must be replaced at least once a year, or when contaminated.

NOTE: The ball valve (or shut-off valve) on the hydraulic tank (see Figure 6-3) must be completely open before engaging the pump or starting the engine.

Labrie Enviroquip Group requires that the hydraulic fluid, return filter element and in-line pressure filter be changed before changing the hydraulic pump.

Manufacturer's warranty on hydraulic pumps provided or sold by Labrie Enviroquip Group could be declared void if the hydraulic fluid, return filter element and in-line pressure filter are not changed prior to replacing the hydraulic pump.

Therefore, it is mandatory to change the return filter element and the in-line pressure filter after the *first* 50 hours of pump operation, then twice a year or when their respective pop-up indicator prompts you to make the change (see Figure 3-1 and Figure 3-2), whichever comes first. The hydraulic fluid must be changed once a year. Hydraulic fluid contamination will severely damage hydraulic components.

Hydraulic System Maintenance & Safety

The hydraulic system of your ALLEY-GATOR™ may require periodic system checks and adjustments.

Hydraulic Safety Warnings

Follow a proper lockout/tagout procedure prior to servicing the hydraulics. Refer to "Lockout/Tagout Procedure" on page 21.

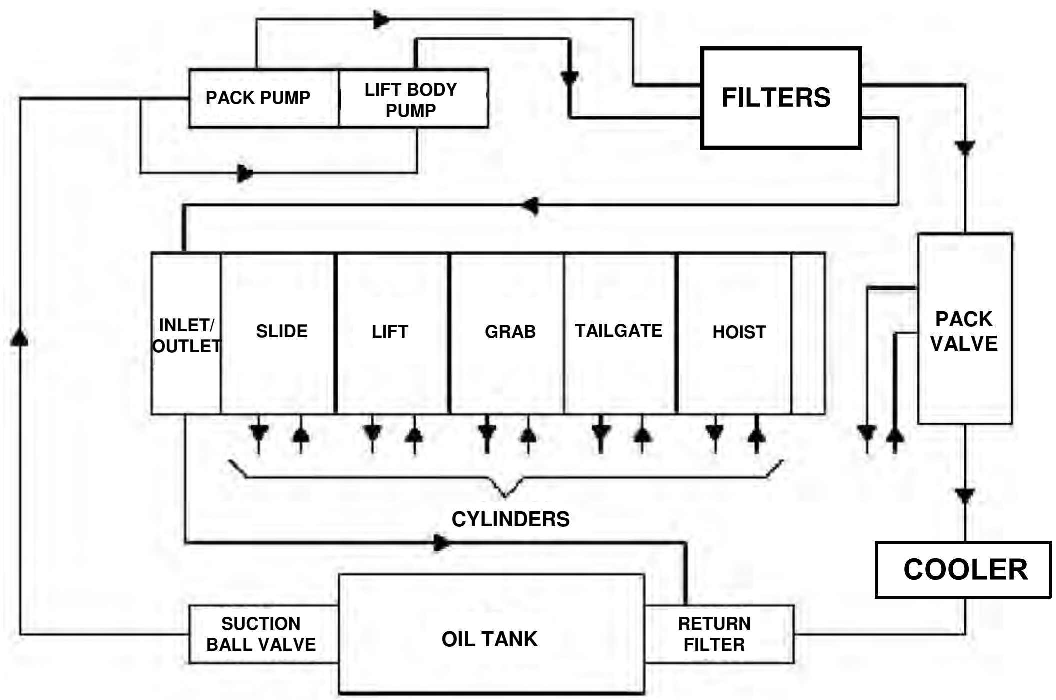
Mechanics performing hydraulic system maintenance must have previous hydraulic experience.

Use caution as human skin can be easily penetrated by high pressure oil (2000 PSI and above).

NOTE: Exercise stringent equipment support procedures when servicing hydraulic systems. Be cautious to overhead dangers.

Danger! Failure to comply with safety precautions and safety procedures may result in serious injury or death.

Alley-Gator™ Hydraulic System



The hydraulic system of the Alley-Gator™ is composed of two circuits. The hydraulic ***pack circuit*** component is supported by its own individual pump and directional valve. The hydraulic ***body and arm circuit*** components are supported by a second pump and control valve. All ***remaining hydraulic components*** are jointly shared by both systems.

Pressure and Cycle Time Chart - Packer Circuit

Function	Pressure Setting	Engine RPM	Cycle Time (sec.) MIN.	Cycle Time (sec.) MAX.
Relief on pump manifold	3000 ± 50 PSI	700	n/a	n/a
Relief on packer valve	2700 ± 50 PSI	700	n/a	n/a
Complete packer cycle	System pressure	700	22	25
Packer counterbalance valve	See procedure on page 101	700	n/a	n/a

Pressure and Cycle Time Chart - VPL Body Circuit

Function	Pressure Setting	Engine RPM	Cycle Time (sec.) MIN.	Cycle Time (sec.) MAX.
VPL main relief valve	2800 ± 50 PSI	700	n/a	n/a
Standby pressure	250 ± 25PSI	700	n/a	n/a
Body hoist up	2500 ± 100 PSI	700	65,0	75,0
Body hoist down	500 ± 100 PSI	700	45,0	55,0
Tailgate up	2500 ± 100 PSI w/ power bleed from packer	700	14,0	17,0
Tailgate down	2500 ± 100 PSI w/ velocity fuse to drain	700	16,0	18,0
Crusher panel up pressure limiter	2500 ± 50 PSI	700	4,0	5,0
Crusher panel down pressure limiter	2500 ± 50 PSI	700	3,0	4,0
Top door open pressure limiter	1400 ± 50 PSI	700	n/a	n/a
Top door close pressure limiter	1400 ± 50 PSI	700	n/a	n/a
Crusher panel up / top door open relief	3350 ± 50 PSI - non adjustable	700	n/a	n/a
Crusher panel down / top door close relief	3350 ± 50 PSI - non adjustable	700	n/a	n/a

Pressure and Cycle Time Chart - VPL Arm Circuit

Function	Pressure Setting	Engine RPM	Cycle Time (sec.) MIN.	Cycle Time (sec.) MAX.
Gripper close VPL valve	1400 ± 50 PSI	700	1,0	2,0
Gripper open VPL valve	1400 ± 50 PSI	700	1,0	2,0
Arm up	2500 ± 50 PSI	700	4,0	5,0

Function	Pressure Setting	Engine RPM	Cycle Time (sec.) MIN.	Cycle Time (sec.) MAX.
Arm down	1800 ± 50 PSI	700	3,5	4,5
Arm up/down brake release pressure	500 ± 50 PSI	700	n/a	n/a
Arm up holding valve (pressure when arm starts to move up)	400 ± 50 PSI	700	n/a	n/a
Arm down holding valve (pressure when arm starts to move down)	1300 ± 50 PSI	700	n/a	n/a
Arm extend	1800 ± 50 PSI	700	3,0	3,5
Arm retract	1800 ± 50 PSI	700	3,0	3,5

Hydraulic Hose

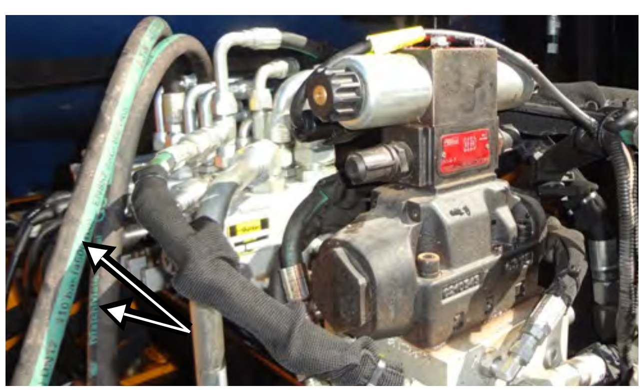
The ALLEY-GATOR™ hydraulic system is supported with the very best quality hydraulic hoses. Any hydraulic hose showing any sign of damage requires replacement. In doing so, it is important that maintenance personnel select hose replacements with the same SAE rating as identified on the original hose.

Detailed hydraulic hose information is provided by the Labrie*Plus* Parts Department. Please contact Labrie for further hose descriptions and coupling guidelines when selecting replacement hoses for the ALLEY-GATOR™ hydraulic system.

As outlined in the Recommended Maintenance Schedule starting on page 34, a daily pre-trip inspection is to be performed by the operator. We advise maintenance personnel to perform a monthly hydraulic hose inspection for leaks and wear.

NOTE: Each hose is clearly identified by a "lay line".

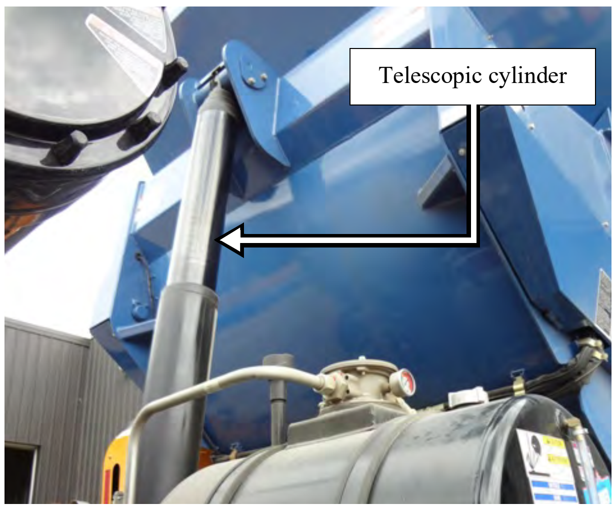
Figure 6-1 "Lay line" on hoses



Hydraulic Cylinders

Hydraulic cylinders convert hydraulic power into linear motion and force. The force generated by a hydraulic cylinder is a product of pressure and effective area. When sizing a cylinder for a specific application, the relationships between pressure, area, displacement volume, flow, speed and the influence of inefficiencies must be considered. Labrie Enviroquip Group uses only first grade hydraulic cylinders of the highest quality. Standard double acting and telescopic cylinders are fitted to your ALLEY-GATOR™.

IMPORTANT: **High pressure fluid is present in operational hydraulic systems. Fluids under high pressure are dangerous and can cause serious injury or death. Only highly qualified and competent maintenance personnel should make modifications, repairs or adjustment to any hydraulic system. Should you have any doubts, CONSULT THE MANUFACTURER.**



Common Hydraulic Components

Hydraulic Oil Tank

The ALLEY-GATOR™ has an aluminum or steel hydraulic oil tank with a 55-gallon (208-liter) capacity. Each tank is fitted with a breather cap of 5 PSI that automatically vents tank pressure in excess of 5 PSI (see Figure 6-3). It is important to periodically ensure that the breather cap is not clogged or damaged. Please refer to "Recommended Maintenance Schedule" on page 34.

A ball valve is located within the suction line of the hydraulic oil tank for maintenance purposes (see Figure 6-3). It is imperative that the ball valve be open while operating the hydraulic pump. Severe damage to the hydraulic pump will occur if it is operated with the valve closed.

Figure 6-2 Hydraulic tank

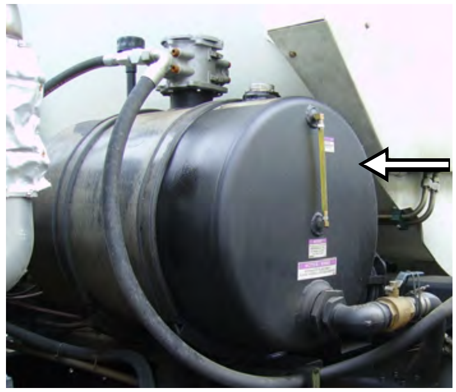


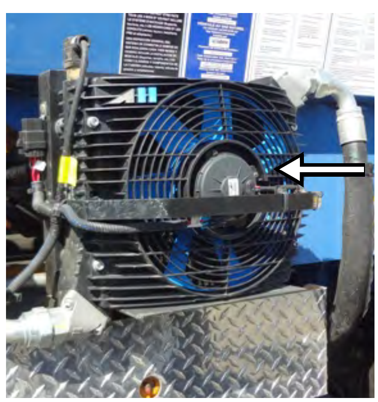
Figure 6-3 Breather cap (left), ball valve (right)



Hydraulic Oil Cooler

Your ALLEY-GATOR™ has been fitted with an aluminum thermostat-controlled oil cooler. The cooler is fitted in the hydraulic return line from the packer valve to the oil tank. When the operating oil temperatures exceed 140 °F (60 °C), the cooler fan starts rotating to help cool down the oil temperature to below 140 °F (60 °C).

Figure 6-4 Hydraulic oil cooler



PTO-Driven or Front-Mounted Pump

The pump used on the ALLEY-GATOR™ is either driven by the power take-off (PTO) or front-mounted through the engine crank shaft. Your ALLEY-GATOR™ has been manufactured to your requirements; each chassis size custom ordered. Type of pump installation varies according to the chassis and manufacturer.

General PTO Safety Information

NOTE: Labrie Enviroquip Group has given careful consideration to your operational needs and the importance of properly matching the vehicle transmission and auxiliary equipment to the correct PTO. If your ALLEY-GATOR™ is PTO equipped, it has been fitted with either a Chelsea or Muncie PTO.

Carefully refer to your Chelsea or Muncie owner's manuals, service manuals and/or other instructions provided with your ALLEY-GATOR™. Always follow proper installing, operating and repairing procedures. Only use proper components in application for which they are approved. Be sure to assemble components properly and never use worn-out or damaged components.

Danger!

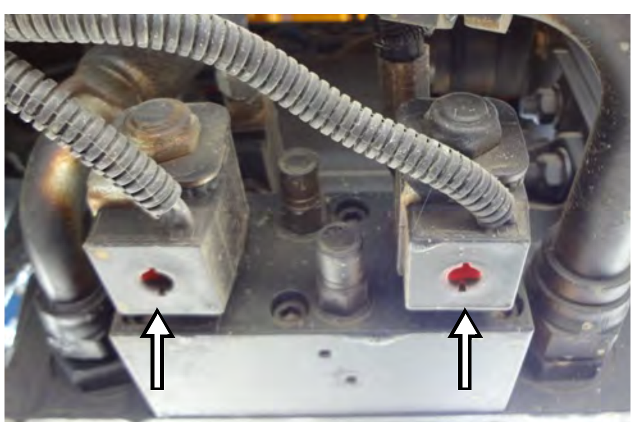


Never operate the controls of the power take-off from any position that could result in getting caught in the moving PTO.

Hydraulic Vane Pump

ALLEY-GATOR™ vehicles are equipped with a dual vane pump. Both sections of the dual vane pump are activated by two electric solenoid valves. Both of these valves are mounted on the pump assembly (see Figure 6-5). The electric signal that activates the solenoids is sent by the pump switch on the control module.

Figure 6-5 Solenoids on hydraulic pump



Directional Control Valves

Your ALLEY-GATOR™ is equipped with a ***packer directional control valve*** and an ***arm and body directional control valve***. These solenoid operated directional valves are for directing and stopping flow at any point in the hydraulic system. The directional valves are designed to provide smoother control of actuator acceleration and deceleration reducing hydraulic shock and increasing component longevity.

Packer Directional Control Valve

The packer directional control valve is bolted to the main manifold and is fitted with an adjustable spool throttle valve that enhances smooth spool shifting (see Figure 6-30). Adjustments may be done by turning the adjustment capscrew clockwise to increase the shifting time and counter-clockwise to decrease the spool shifting time. The spool throttle manifold block houses a shuttle valve which sends the signal to the hydraulic pump to supply hydraulic fluid to the hydraulic system. The packer directional control valve also houses a relief valve that is located in the subplate manifold. This relief valve limits the pressure of the packer system.

Arm and Body Directional Control Valve

The arm and body directional control valve is mounted to the chassis frame in front of the hopper bowl. The directional control valve is solenoid operated and consists of working sections each individually devoted to a single hydraulic function. Identification of each section is made as such, from left to right: arm in/out, arm up/down, grabber open/close, hopper cover open/close (optional) or crusher panel up/down (optional), tailgate up/down and body hoist up/down.

NOTE: Starting from the left, the 4th section of the arm and body directional control valve is an optional working section.

The directional control valve has a main relief valve that has been set to 2800 PSI; this setting should not be adjusted. The individual working section relief valves should not require adjustment. However, should adjustment become necessary, pressure adjustment guidelines are outlined on page 95.

Hydraulic Pressure Adjustments

Main Valve Standby Pressure Adjustment

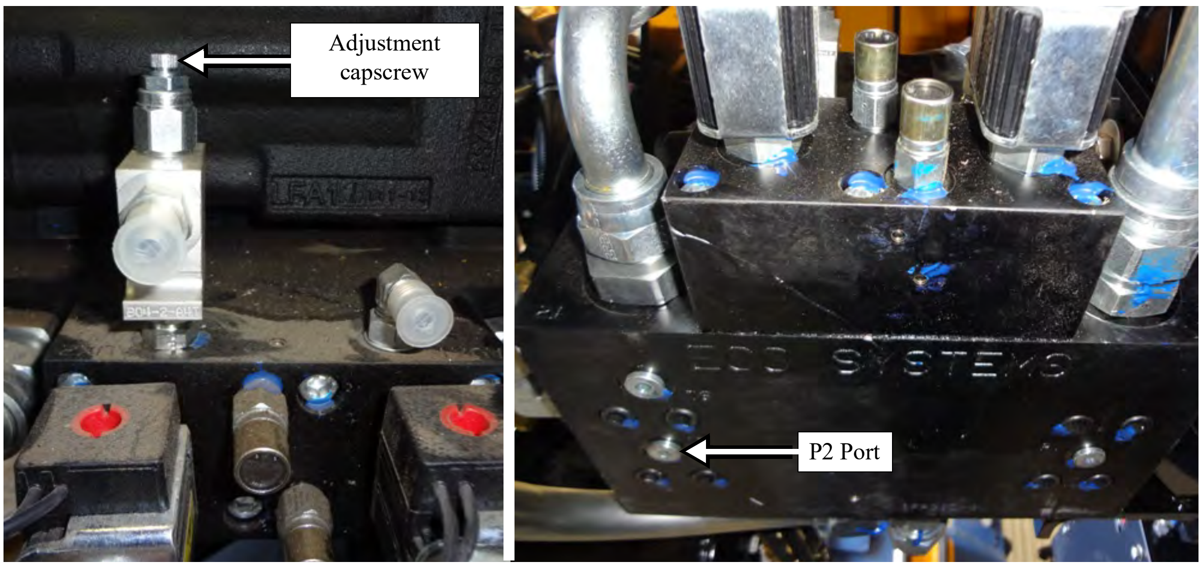
IMPORTANT: Adjustments to the main (arm and body) valve system pressure must be performed by qualified maintenance personnel only. Improper procedure or exceeding correct pressure setting can cause equipment failure/damage, injury or death.

NOTE: Prior to adjusting the hydraulic arm and body circuit pressures, maintenance personnel must first ensure that the standby pressure is 250 PSI.

To adjust the standby pressure, proceed as follows:

1. ENSURE the pump is disengaged and the engine is OFF.
2. INSERT a 0-3000 PSI gauge into the P2 port (see Figure 6-6).
3. START the truck.
4. With the pump ON and no functions operating, SET the pressure to 250 PSI by turning the adjustment capscrew (see Figure 6-6) clockwise or counter-clockwise depending on the gauge reading.
5. REMOVE the gauge after correctly setting the pressure.

Figure 6-6 Standby pressure adjustment



Upon completion of achieving the proper standby pressure, maintenance personnel may then carry out hydraulic system pressure adjustments.

Arm & Body Circuit Pressure Adjustments

IMPORTANT: Adjustments to the arm and body circuit pressure must be performed by qualified maintenance personnel only. Improper procedure or exceeding correct pressure setting can cause equipment failure/damage, injury or death.

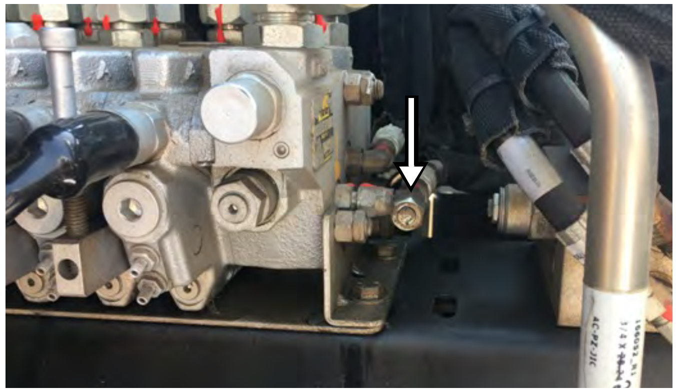
NOTE: Prior to adjusting the hydraulic arm and body circuit pressure, maintenance personnel must first ensure that the main valve standby pressure is 250 PSI.

To adjust the arm and body circuit hydraulic pressure:

1. ENSURE the pressure gauge is in the pressure test port of the directional control valve (see Figure 6-7).
2. While the engine is running and the pump is ON, OPERATE the tailgate circuit to the fully closed position by pushing the tailgate lever.

The gauge should read a ***system pressure of 2500 PSI.***

Figure 6-7 Test port on arm and body directional control valve



NOTE: An adaptor may be needed to connect the gauge to the test port.

Figure 6-8 Connecting the gauge to the test port using an adaptor



If adjustment is required, it is performed simultaneously as described:

NOTE: Two people are needed to make this adjustment correctly.

3. ENSURE the pump is disengaged and the engine is OFF.
4. LOOSEN the locknut of the main relief valve (see Figure 6-9) and with an Allen key TURN the adjustment screw clockwise until it stops.
5. On the tailgate section, LOOSEN the locknut of the front relief valve (see Figure 6-10).
6. TURN the tailgate relief valve adjustment screw clockwise until it stops using an Allen key.

Figure 6-9 Main relief valve - arm and body directional control valve

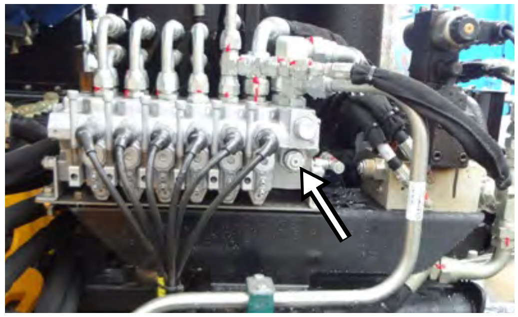
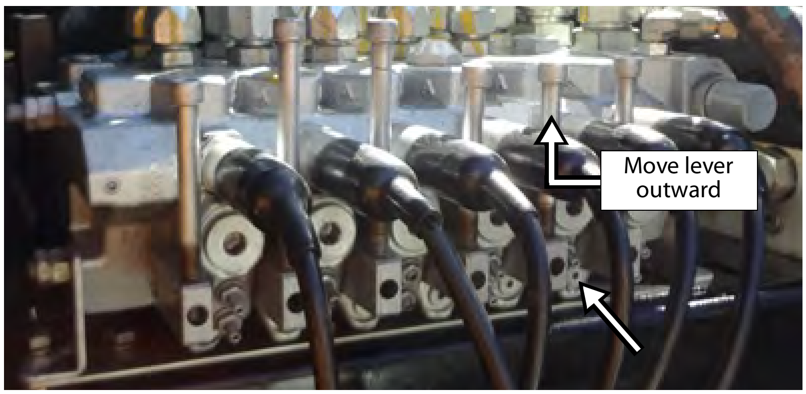


Figure 6-10 Tailgate section front relief valve



7. REDUCE arm and body pump pressure to minimum using the main relief valve (see Figure 6-11). To do so:

7 a. REMOVE the cap from the relief valve, LOOSEN the locknut and TURN the adjustment screw OUT to decrease pressure.

7 b. Once completed, RETIGHTEN the locknut.

8. START the truck and ENGAGE the pump.

9. While a helper is pulling the tailgate lever outward ADJUST the main relief valve pressure on the arm and body hydraulic pump (see Figure 6-11). To do so:

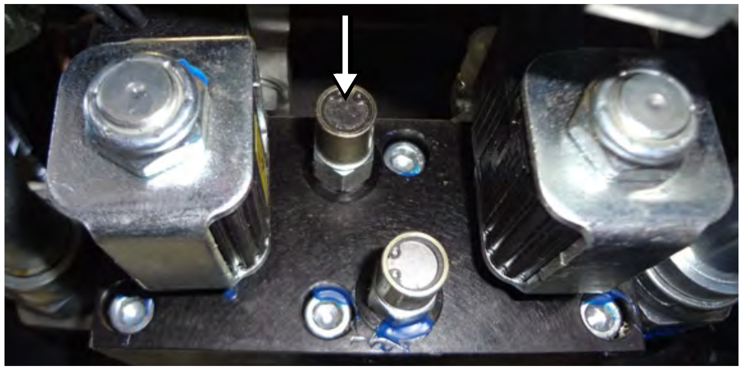
9 a. LOOSEN the locknut.

9 b. TURN the adjustment screw IN to RAISE PRESSURE.

The pressure should be set at 3000 PSI.

9 c. Once completed, RETIGHTEN the locknut and PUT BACK the cap.

Figure 6-11 Main relief valve on arm & body pump



10. Once the pressure of the main relief valve on the arm and body pump has been properly set, ADJUST the main relief valve pressure on the main (arm and body) valve (see Figure 6-9). To do so:

10 a. Using an Allen key TURN the adjustment screw COUNTER-CLOCKWISE until the pressure reaches 2800 PSI.

10 b. Once done, RETIGHTEN the locknut of the main relief valve.

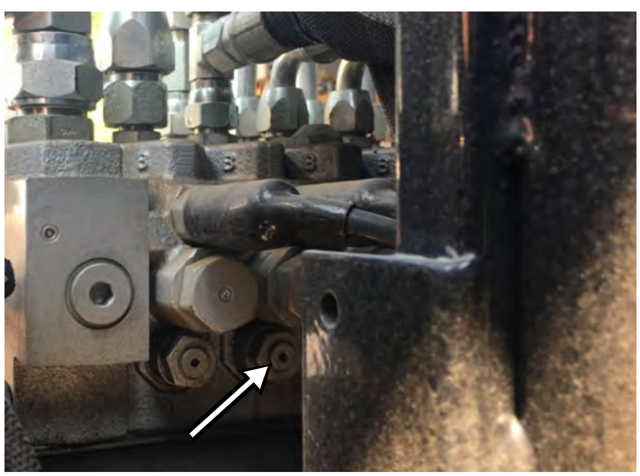
11. Once the pressure of the main relief valve on the main (arm and body) valve has been properly set, ADJUST the tailgate section front relief valve pressure (see Figure 6-10). To do so:

11 a. While pulling the tailgate lever outward, TURN the tailgate adjustment screw COUNTER-CLOCKWISE until the pressure reaches 2500 PSI using an Allen key.

11 b. Once done, RETIGHTEN the locknut of the tailgate front relief valve.

12. LOOSEN the locknut of the tailgate section rear relief valve (at the back of the arm and body directional control valve) [see Figure 6-12].

Figure 6-12 Tailgate section relief valve at rear of valve block

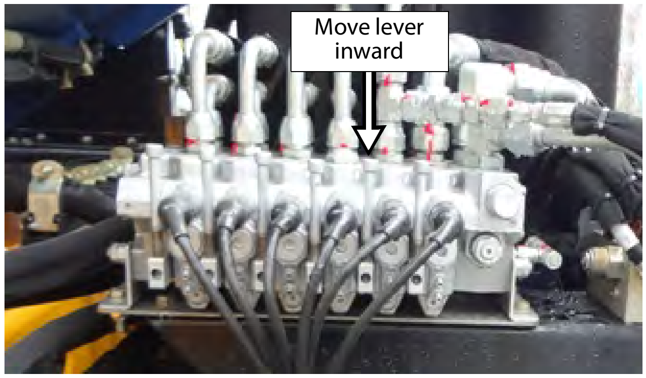


13. With an Allen key, ADJUST the pressure to 2500 PSI while pushing the tailgate section lever inward (assuming that you are behind the valve block).

TURN the adjustment screw IN to RAISE the PRESSURE or OUT to DECREASE PRESSURE.

Correct pressure is 2500 PSI.

Figure 6-13 Tailgate section lever



14. Once done, RETIGHTEN the locknut.
15. PROCEED with the pressure adjustment on the remaining working sections of the arm and body directional control valve. For each remaining working section, do the following:
    - **15 a.** LOOSEN the locknut of the front relief valve.
    - **15 b.** While pulling the section lever outward, TURN the adjustment screw CLOCKWISE or COUNTER-CLOCKWISE until the pressure reaches the proper value using an Allen key.

      See page 92 for the proper value corresponding to the working section of which the pressure is being adjusted.
    - **15 c.** Once done, RETIGHTEN the locknut of the front relief valve.
    - **15 d.** LOOSEN the locknut of the rear relief valve.
    - **15 e.** While pushing the section lever inward, TURN the adjustment screw CLOCKWISE or COUNTER-CLOCKWISE until the pressure reaches the proper value using an Allen key.

      See page 92 for the proper value corresponding to the working section of which the pressure is being adjusted.
    - **15 f.** Once done, RETIGHTEN the locknut of the rear relief valve.

NOTE: Refer to page 92 for the exact location of each section of the arm and body directional control valve along with the corresponding pressure to apply.

Packer Circuit Pressure Adjustment

To adjust the packer circuit hydraulic pressure:

1. ENSURE the pressure gauge is connected to the pressure test port of the packer circuit control valve (see Figure 6-14).

IMPORTANT: Before connecting the gauge to the test port, ensure the truck's engine is turned off.

NOTE: An adaptor may be needed to connect the gauge to the test port.

2. While the engine is running and the pump is ON, have a helper operate the packer in either direction using the PACKER PANEL switch on the in-cab control panel.

While the packer is moving, check on the gauge: it ***should read 2700 PSI.***

Figure 6-14 Test port



If adjustment is required, it is performed simultaneously as described:

NOTE: Two people are needed to make this adjustment correctly.

3. ENSURE the pump is disengaged and the engine is OFF.
4. REMOVE the cap from the main relief on the packer valve (see Figure 6-15).

Figure 6-15 Packer relief valve



5. LOOSEN the locknut of the relief valve and with an Allen key TURN the adjustment screw clockwise until it stops.
6. REDUCE packer pump pressure to minimum using the main relief valve (see Figure 6-16). To do so:
   - **6 a.** REMOVE the cap from the relief valve, LOOSEN the locknut and TURN the adjustment screw OUT to decrease pressure.
   - **6 b.** Once completed, RETIGHTEN the locknut.
7. START the truck and ENGAGE the pump.
8. While a helper is operating the packer (cylinder bottoming out in both directions), ADJUST the main relief valve on the packer hydraulic pump (see Figure 6-16). To do so:
   - **8 a.** LOOSEN the locknut.
   - **8 b.** TURN the adjustment screw IN to RAISE PRESSURE.

     The pressure should be set at 3000 PSI.
   - **8 c.** Once completed, RETIGHTEN the locknut and PUT BACK the cap.

Figure 6-16 Main relief valve on packer pump



9. Once the pressure of the packer pump relief valve has been properly set, ADJUST the relief valve pressure on the packer valve (see Figure 6-15). To do so:

9 a. Using an Allen key TURN the adjustment screw COUNTER-CLOCKWISE until the pressure reaches 2700 PSI.

The packer must be cycling while the pressure is being adjusted.

9 b. Once done, RETIGHTEN the locknut and PUT BACK the cap on the relief valve.

Working Sections of the Arm & Body Directional Control Valve

The directional control valve consists of working sections, each individually devoted to two hydraulic functions (Figures 6-17 and 6-18). Each section has outlet ports with secondary relief valves, each one functioning with different working pressures. The correct pressure settings are outlined below:

Figure 6-17 Arm and body directional valve (part 1)

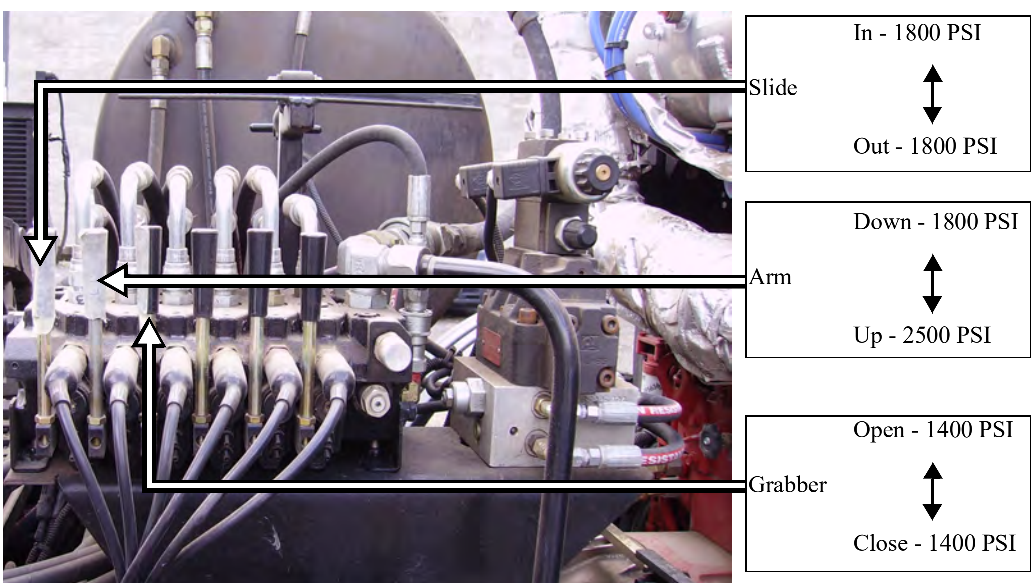
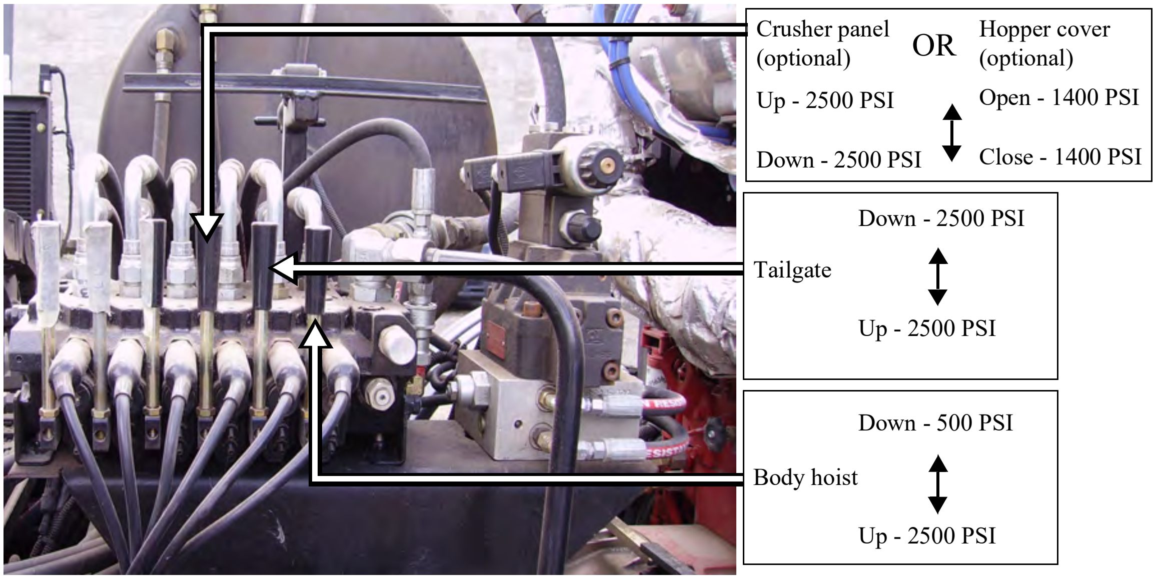


Figure 6-18 Arm and body directional valve (part 2)



The individual working section secondary relief valves should not require adjustment. However, should adjustment become necessary, individually operate each hydraulic function and adjust the relief screw until the correct pressure is obtained.

IMPORTANT: Pressure adjustments to the system must be performed by qualified maintenance personnel only.

Slide Work Circuit

The slide work circuit (see Figure 6-17) consists of one double acting cylinder, one valve bank section with proportional solenoid and two secondary port relief valves.

Pressure Settings	
Slide IN	1800 PSI
Slide OUT	1800 PSI

Arm Work Circuit

The lift work circuit (see Figure 6-17) consists of two hydraulic motors and brake, one valve bank section with proportional solenoid, a counter-balance valve and two secondary port relief valves.

Pressure Settings	
Arm UP	2500 PSI
Arm DOWN	1800 PSI

Grabber Work Circuit

The grabber work circuit (see Figure 6-17) consists of two double acting hydraulic cylinders, one valve bank section with on/off solenoid and two port relief valves.

Pressure Settings	
Grabber OPEN	1400 PSI
Grabber CLOSE	1400 PSI

Tailgate Work Circuit

The tailgate work circuit (see Figure 6-18) consists of two double acting hydraulic cylinders, one valve bank section with on/off solenoid, two pilot-operated check valves and two secondary port relief valves.

Pressure Settings	
Tailgate UP	2500 PSI
Tailgate DOWN	2500 PSI

Body Hoist Work Circuit

The body hoist work circuit (see Figure 6-18) consists of one single acting cylinder, one valve bank section with on/off solenoid, two velocity check valves and two secondary port relief valves. However, only one relief valve is truly utilized *(body UP)*. The other hydraulic function *(body DOWN)* lowers on the principal of gravity and the physical weight of the body thus enabling the relief port to be set at the very minimum.

Pressure Settings	
Body hoist UP	2500 PSI
Body hoist DOWN	500 PSI

Hopper Cover/Crusher Panel Work Circuit (optional)

Your ALLEY-GATOR™ may be equipped with a hopper cover or a crusher panel. If so, the 4th working section starting from the left is devoted to the hydraulic functions of the hopper cover or the crusher panel.

The hopper cover/crusher panel work circuit (see Figure 6-18) consists of one double acting cylinder, one valve bank section with on/off solenoid, two flow restrictors and two secondary work port valves.

Pressure Settings	
Hopper cover OPEN	1400 PSI
Hopper cover CLOSE	1400 PSI
Crusher panel DOWN	2500 PSI
Crusher panel UP	2500 PSI

Hydraulic Safety Valves

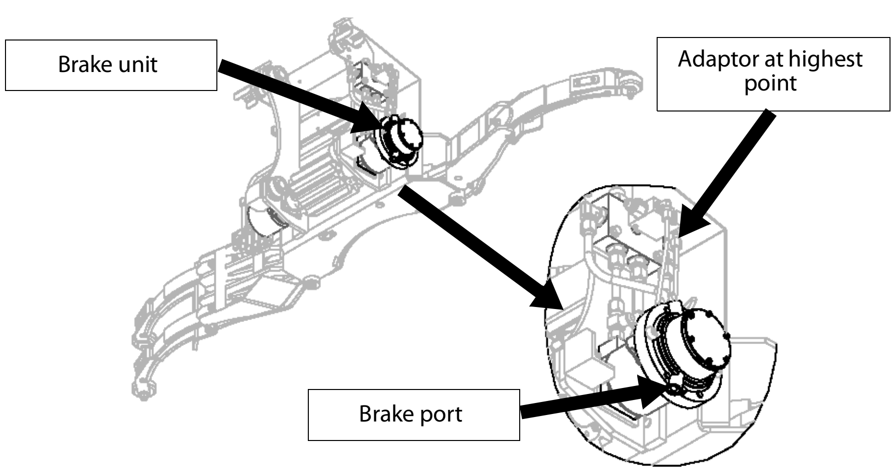
Adjusting Pressure Reducing Valve

NOTE: Prior to attempting the following adjustment, make sure the brake unit is fully bled from air. After having installed the gauge, proceed with the air bleed procedure: 1) Start the engine and engage the pump. 2) Crack the adaptor at the highest point (see Figure 6-19) until air and oil start flowing. 3) Retighten the adaptor when air is fully bled.

To adjust the pressure reducing valve:

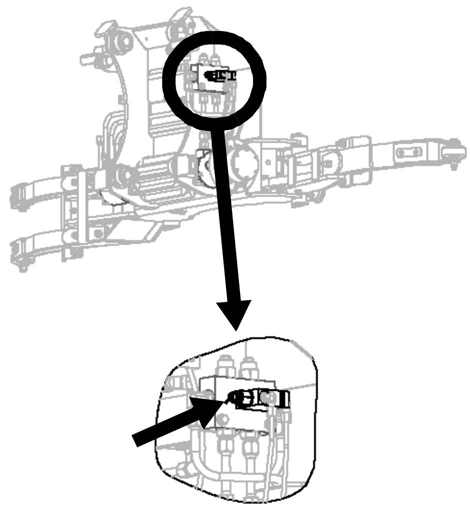
1. Install the pressure gauge on the brake port (see Figure 6-19).

Figure 6-19 Brake unit



2. Keep the carriage down by using the arm down function on the hydraulic valve and adjust pressure to 500 PSI using the pressure reducing cartridge.

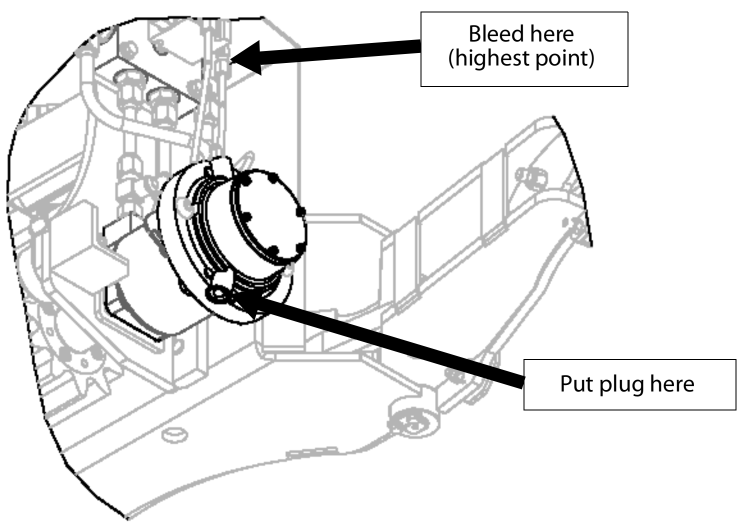
Figure 6-20 Pressure reducing cartridge



3. Remove the pressure gauge and plug back the brake unit.
4. Fully bleed the brake chamber before pressurization.

   Bleed at the highest point.

Figure 6-21 Plugging back brake unit



Adjusting Arm Counter-Balance Valve Pressure

Located on the cradle of the ALLEY-GATOR™ arm (lift cylinder) is a counter balance valve (see Figure 6-24). The valve ensures that the lift assembly operates smoothly and provides the motor brake with a pilot signal to release when the cradle is directed upwards or downwards (a hydraulic lock to the hydraulic system of the ALLEY-GATOR™). The valve prevents motor oil from returning into the system.

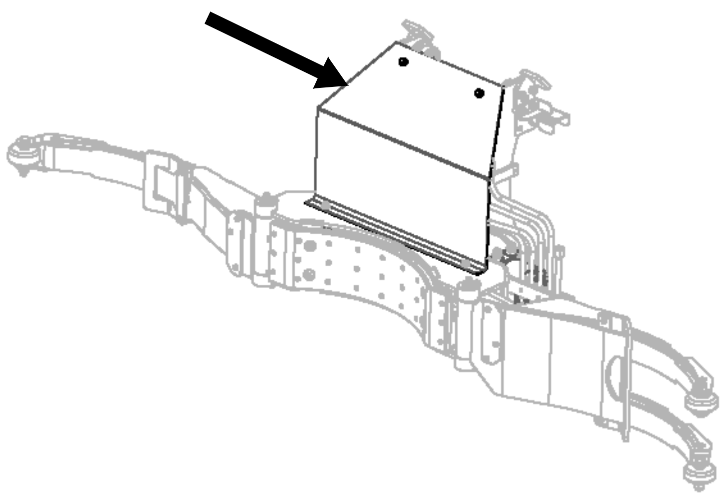
Circumstances that indicate that the valve needs adjustment are identified when the lift is not operating in a smooth motion or when the cylinder is moving in or out when the function has not been activated.

NOTE: Before proceeding with the following procedure, first apply the preceding procedure "Adjusting Pressure Reducing Valve" (page 95).

To adjust the counter-balance valve pressure:

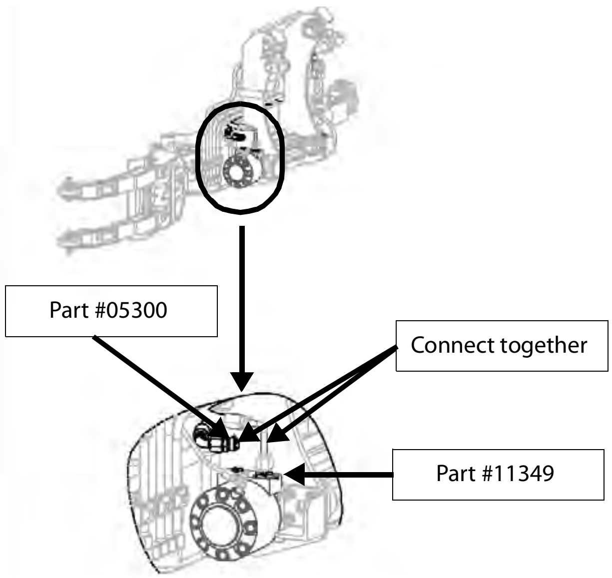
1. Remove the guard protecting the hydraulic hoses (see Figure 6-22).

Figure 6-22 Protecting guard



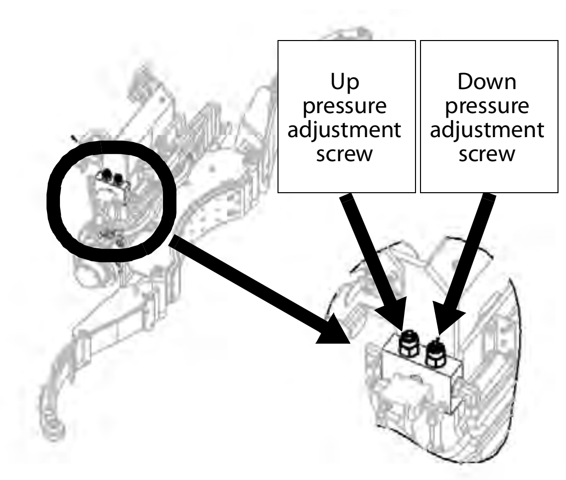
2. Connect both hydraulic hoses together using part #HYF05300 to bypass the left hydraulic motor as outlined in Figure 6-23.

Figure 6-23 Bypassing hydraulic motor



3. Install the pressure gauge on the inlet port of the directional control valve in order to read the working pressure of the carriage while it moves up and down.
4. Adjust both UP and DOWN pressures on the counter-balance valve.
   UP pressure should be at 450 PSI; DOWN pressure should be at 600 PSI.

Figure 6-24 Arm counter-balance valve

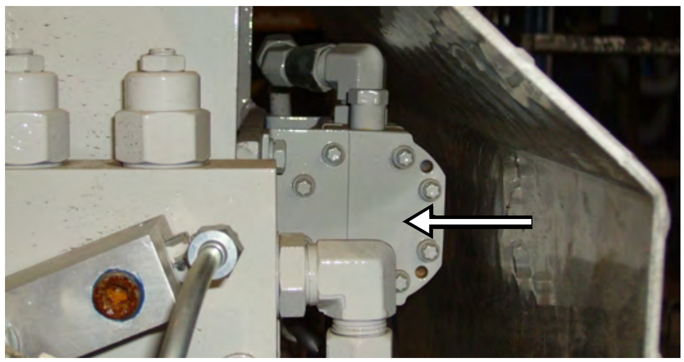


Hydraulic Flow Dividers

Arm Flow Divider

The flow divider is used to hydraulically synchronize two parallel motions of the grabber; grab open and grab close. This is obtained by splitting the flow from a single pump source to the pair of matched grabber cylinders. Two differential pressure relief valves allow either side to deadhead without building up detrimental high pressure. This also enables the pair of cylinders to synchronize at the end of each stroke without accumulating errors. The adjustable flow divider is located above the grabber behind the removable guard.

Figure 6-25 Arm flow divider



NOTE: Adjustments to the flow divider is necessary if the hydraulic functions are operating at improper rates of motion, either too fast or too slow.

IMPORTANT: Only qualified maintenance personnel should perform necessary adjustments. Component failure, damage, injury or death may result.
Do not attempt to synchronize the grabber cylinders without utilizing the differential pressure relief valves.

Control Circuit

The control circuit allows the maintenance personnel to check and adjust the system pressure at different points along the circuit. The following items can be checked and adjusted:

- Standby pressure
- Arm pump pressure
- Packer pump pressure

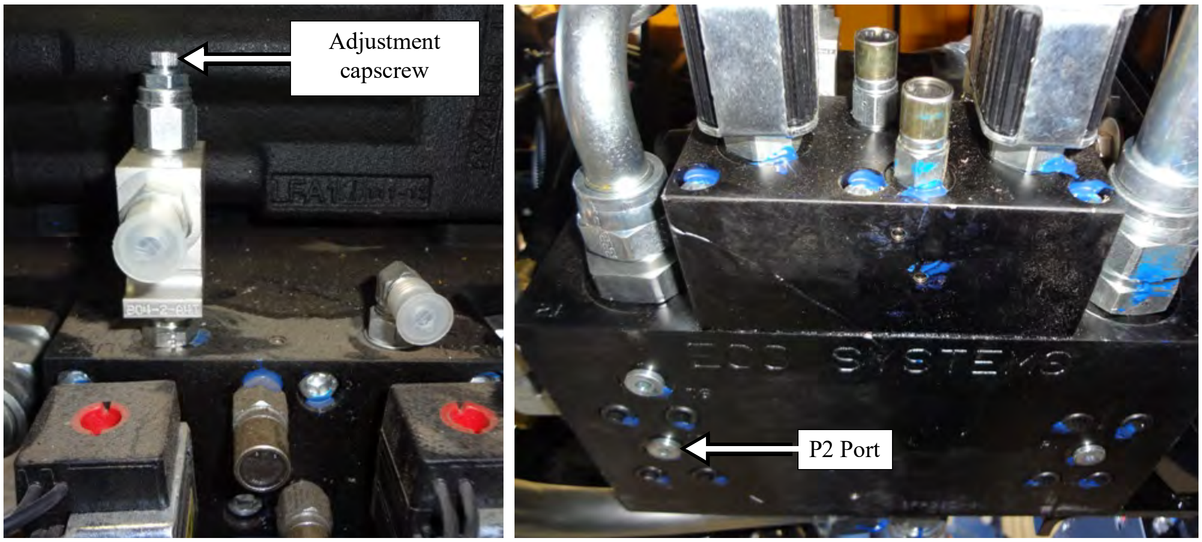
Adjusting Standby Pressure

To adjust the standby pressure, proceed this way:

1. INSERT a 0-3000 PSI gauge into the P2 port (see Figure 6-26).

2. With the pump on and no functions operating, SET pressure to 250 PSI by turning the adjustment capscrew clockwise or counter-clockwise depending on the gauge reading (see Figure 6-26).
3. REMOVE the gauge after correctly setting the pressure.

Figure 6-26 Standby pressure adjustment

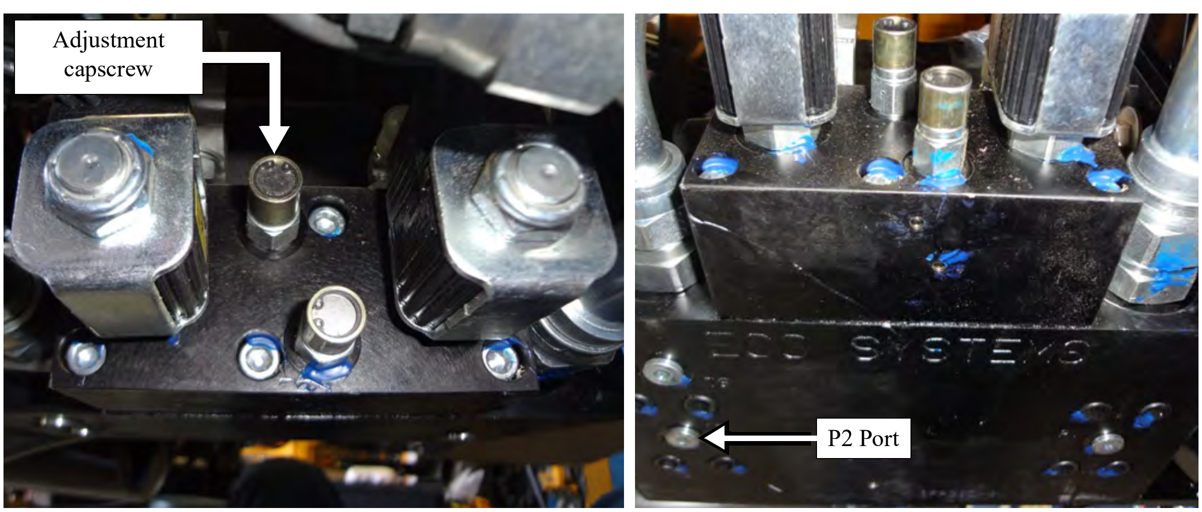


Adjusting Arm Pump Pressure

To adjust the arm pump pressure:

1. INSERT a 0-3000 PSI gauge into the P2 port (see Figure 6-27).
2. With the pump on and the arm function stroked to the full up position, SET pressure to 2700 PSI by turning the adjustment capscrew clockwise or counter-clockwise depending on the gauge reading (see Figure 6-27).
3. REMOVE the gauge after correctly setting the pressure.

Figure 6-27 Arm pump pressure adjustment

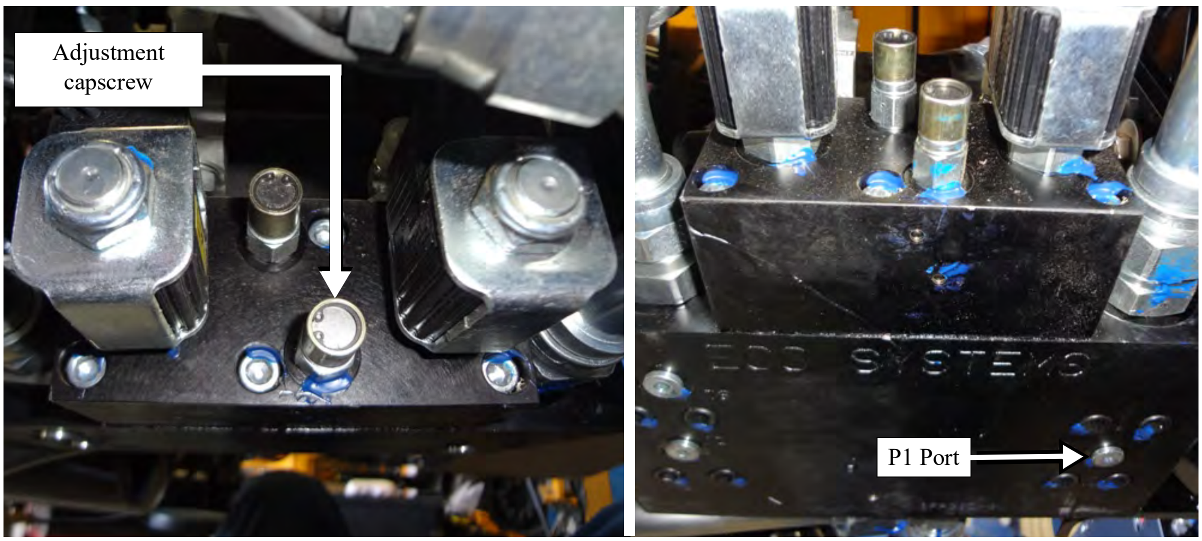


Adjusting Packer Pump Pressure

To adjust the packer pump pressure:

1. INSERT a 0-3000 PSI gauge into the P1 port (see Figure 6-28).
2. With the pump on and the packer function stroked to the full up position, SET pressure to 3000 PSI by turning the adjustment capscrew clockwise or counter-clockwise depending on the gauge reading (see Figure 6-28).
3. REMOVE the gauge after correctly setting the pressure.

Figure 6-28 Packer pump pressure adjustment



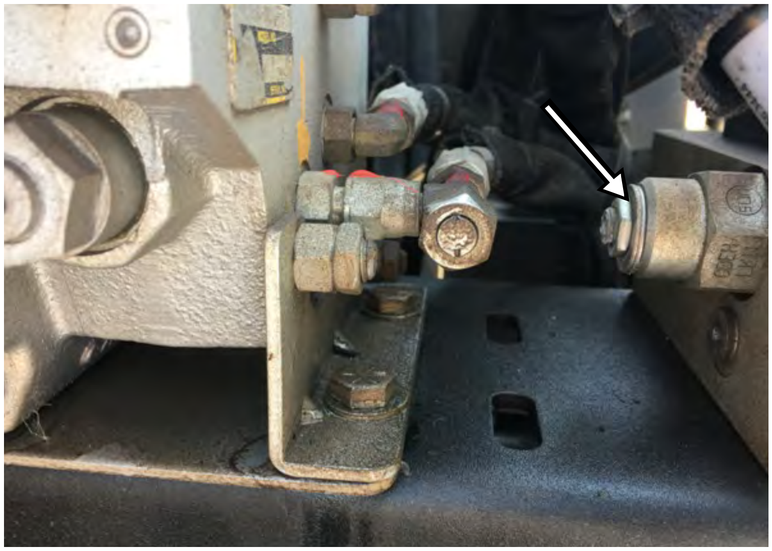
Also, in order to improve the efficiency of the packer, it may be required to adjust the packer counter balance valve and the packer choke valve (see next 2 sections).

Adjusting Packer Counter Balance Valve

To adjust the packer counter balance valve, do the following:

1. ACTIVATE the packer retract let-off switch.
2. SCREW IN the counter balance valve until the packer drifts down.
3. BACK OUT the valve until the packer maintains full up position.

Figure 6-29 Packer counter balance valve



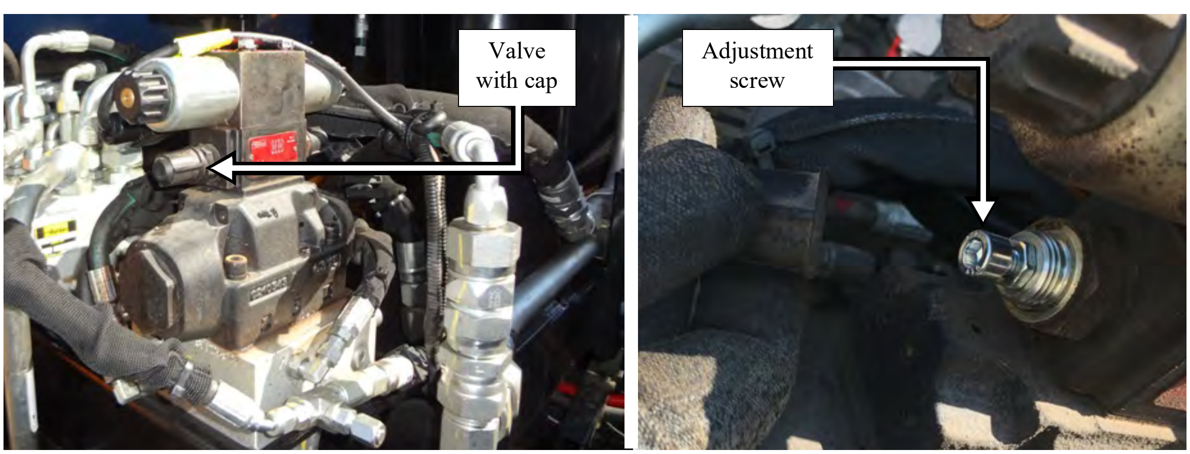
Adjusting Packer Choke Valve

To adjust the packer choke valve:

1. LOCATE the choke valve on the front side of the packer valve (see Figure 6-30).
2. REMOVE the cap from the valve.
3. With the auto-pack running, SCREW the adjustment screw in until there is approximately ½ second delay between each cylinder stroke shift.

NOTE: If the pendulum packer hits hard at the end of its upper or lower stroke, you can adjust the cushioning speed by which the packer ends its stroke by using this choke valve (see Figure 6-30). Turn the valve clockwise or counter-clockwise to reach the proper adjustment. Several attempts and testing may be required.

Figure 6-30 Packer choke valve (w/ cap - w/o cap)



Hydraulic Control System Diagnostic Procedures

The Labrie Alley-Gator consists of three main valves to control the functions of the hydraulic system. These items are:

- **Hydraulic Pump Monoblock Valve** – Controls the hydraulic pressure and flow to the packer, arm and body functions.
- **Packer Valve** – Controls the functions of the packer system.
- **Arm/Body Valve** – Controls all functions of the automated arm, as well as the body tailgate raise/lower and body hoist raise/lower functions. Options such as hopper covers may also be controlled by this valve.

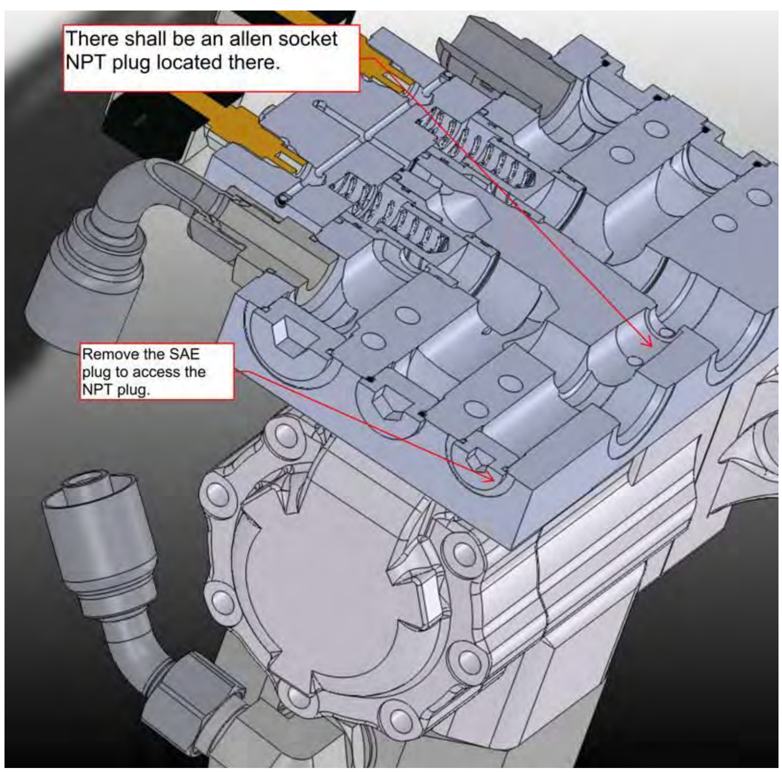
With the use of electro-magnetic valves within all valve assemblies on the Alley-Gator, hydraulic system cleanliness is critical. Proper and timely performance of planned maintenance per the schedule outlined in Chapter 3 of this Manual must be observed.

Diagnostic Tips

This section describes tips to aid in the diagnostic procedures when performing service to an Alley-Gator hydraulic system.

Symptom: Unable to build pressure on the arm/body control valve or the packer valve, unless deadheading functions on both valves.

Possible solution: There is a plug in the hydraulic pump monoblock valve that separates the two hydraulic systems. This plug may have backed out, allowing load sense to pass between hydraulic systems.

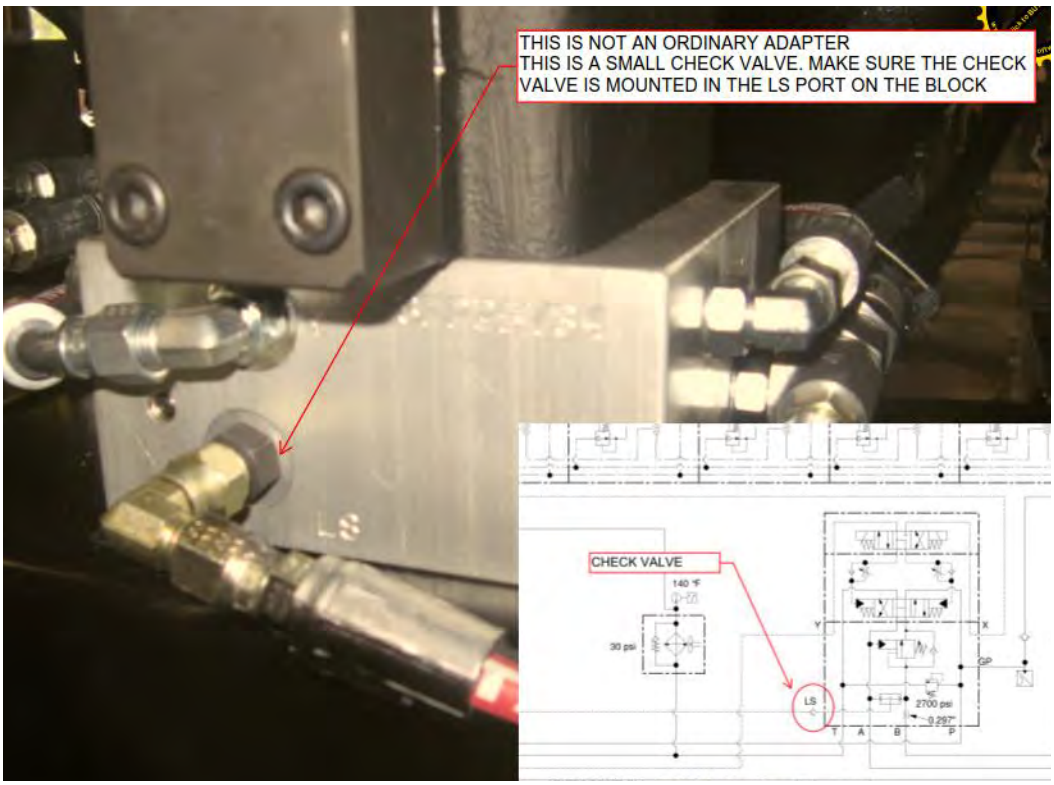


Symptom: Replaced the hydraulic pump monoblock valve, and now the packer valve will not function.

Possible solution: Ensure the compensator block is installed in the hydraulic pump monoblock valve, in the Aux 2 port, and the standby pressure is adjusted correctly (see *Main Valve Standby Pressure Adjustment* on page 85).

Symptom: Replaced the packer valve but it is inoperative.

Possible solution: Verify that the check valve in the LS (load sense) line on the packer valve is installed correctly.



Symptom: The arm/body control valve functions, but not the packer valve; or the packer valve functions but not the arm/body control valve.

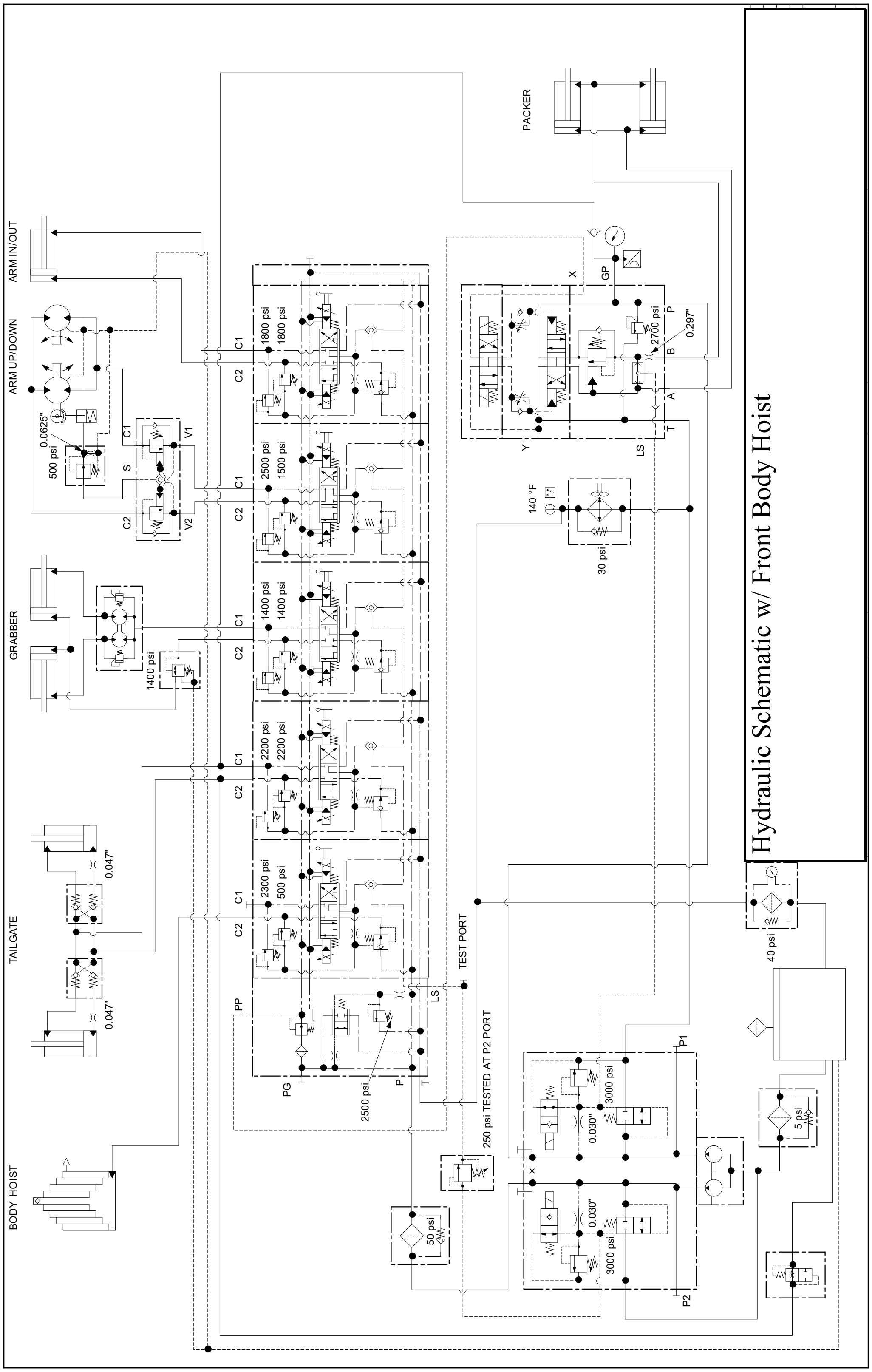
Possible solution: On the hydraulic pump monoblock valve, verify both coils are magnetized. If power and ground test OK, swap the coils and verify operation. If there is no change, swap the main relief cartridges in the hydraulic pump monoblock valve. The coils and main relief cartridges are identical between the two.

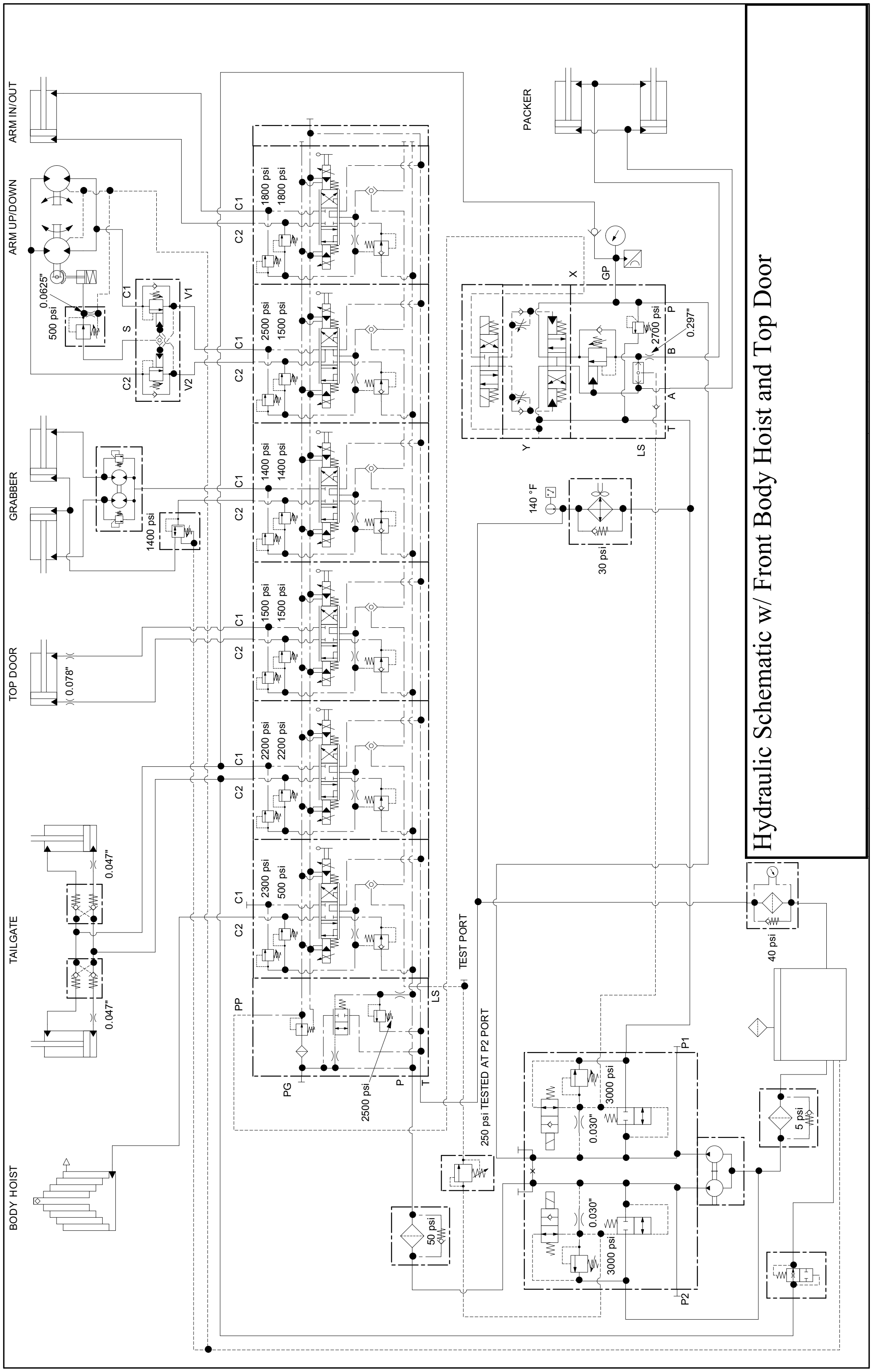


Symptom: Standby pressure is correct, but unable to generate consistent load sense or relief pressure.

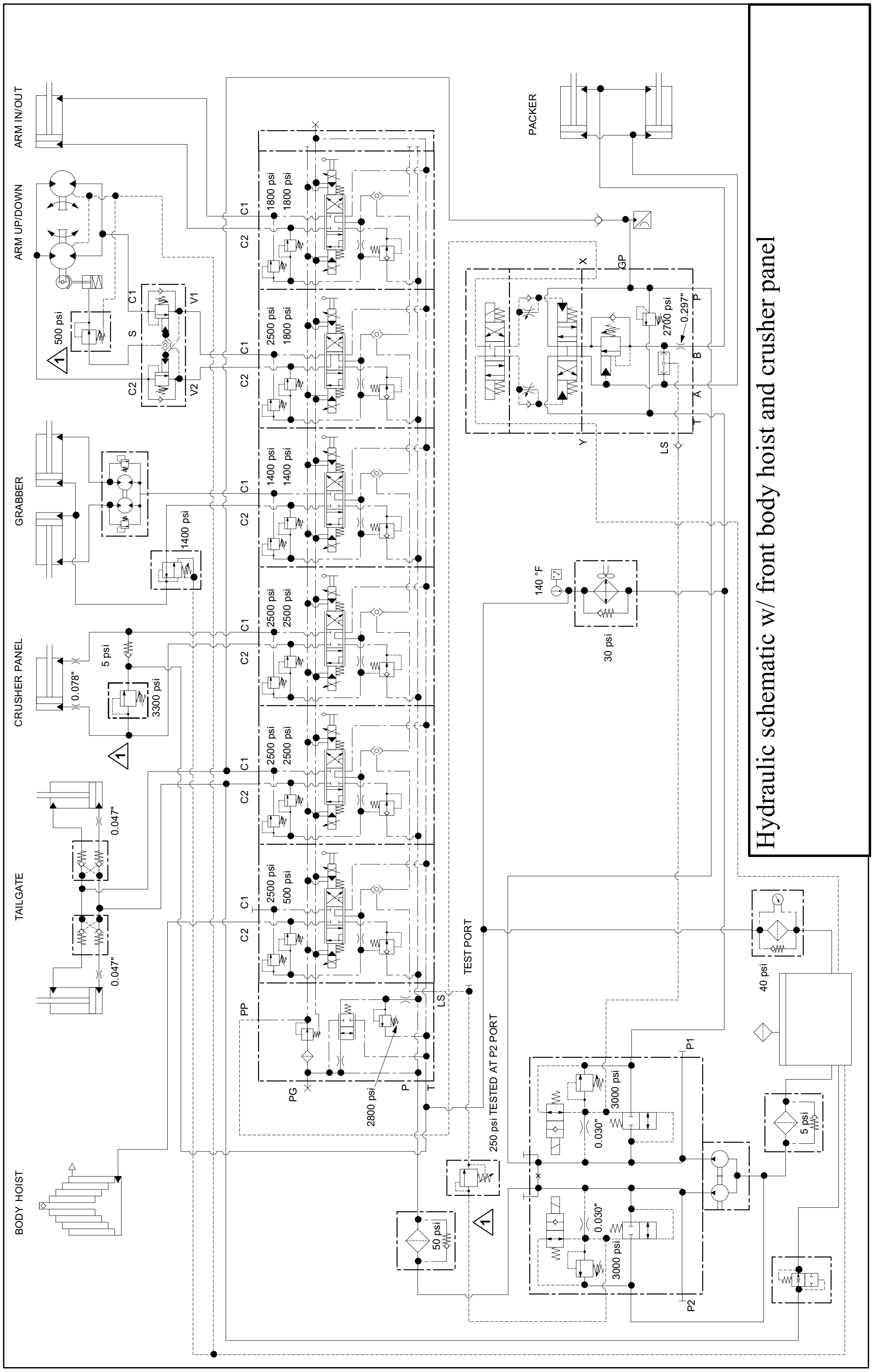
Possible solution: Remove the aluminum block from the hydraulic pump monoblock valve that houses the coils and main reliefs, and verify smooth and consistent movement of the plungers behind it. These plungers are what sense the load sense pressure and allow the pump to ramp up.

Hydraulic System Schematics





Hydraulic Schematic w/ Front Body Hoist and Top Door



Hydraulic schematic w/ front body hoist and crusher panel
BODY HOIST
TAILGATE
CRUSHER PANEL
GRABBER
ARM UP/DOWN
ARM IN/OUT
PACKER
C1
C2
V1
V2
S
500 psi
1400 psi
5 psi
3300 psi
0.078"
0.047"
1800 psi
2500 psi
1400 psi
2800 psi
PP
PG
P
T
LS
TEST PORT
250 psi TESTED AT P2 PORT
50 psi
140 °F
30 psi
40 psi
3000 psi
0.030"
P1
P2
X
Y
GP
2700 psi
0.297"
A
B

7

Lifting Arm

This chapter details how to adjust the arm cushioning effect and the arm side rollers.

To perform these tasks, maintenance personnel must be familiar with the operation of the arm and the safety around it.

NOTE: For information related to arm hydraulics, refer to the following: “Pressure and Cycle Time Chart - VPL Arm Circuit” page 80; “Arm and Body Directional Control Valve” page 85; “Arm & Body Circuit Pressure Adjustments” page 86; “Working Sections of the Arm & Body Directional Control Valve” page 92; “Slide Work Circuit” page 93; “Arm Work Circuit” page 93; “Grabber Work Circuit” page 94; “Adjusting Arm Counter-Balance Valve Pressure” page 97; “Arm Flow Divider” page 99; “Adjusting Arm Pump Pressure” page 100; and “Hydraulic System Schematics” page 106.

Arm Cushion Adjustment

Caution! Misadjustments and/or overspeeds of the arm or cradle could cause premature damage and/or warranty disapprovals.

A. To check *arm in* cushion:

1. Extend arm completely by moving the joystick full right until arm completes travel.
2. With arm fully extended, retract arm fully by moving joystick to the full left position.
3. Arm should move full speed in the retract direction until approximately 18 inches short of the body and cushion down to a minimum of ¾ speed.

4. The arm should cushion at the body so that the arm does not hit hard the body, just rocks it lightly.

NOTE: Cushions may differ depending on the weight of the cans being dumped.

B. To adjust *arm in* cushion (MDM):

1. On the MDM screen (see Figure 2-15), clear all messages on the screen by pressing **ESC** until you see the PendPac Information Screen.
2. Hit **ESC** on the MDM module, and this should bring you to Mode, Properties, Measure or Information Screen.
3. Scroll up by pushing the arrow key until the screen reads Properties.
4. Push the other key.
5. The MDM screen should read Function Parameters.
6. Select **OK** on the MDM screen.
7. Scroll up until the screen reads Arm In Cushion.
8. Select **OK** on the MDM screen.
9. Adjust parameters by scrolling up or down using the arrow keys.
10. Repeat steps A1 through A4 until a comfortable setting is reached.

NOTE: The higher the percentage the faster the flow and the lower the percentage the slower the flow.

C. To check *arm up* cushion:

1. Move the gripper assembly to the full down position by pushing the joystick fully forward.
2. From the full down position move the lift gripper assembly full up by pulling the joystick to the full rear position.
3. The gripper assembly should travel up at full speed until the top cushion striker bar is reached and then slow to a minimum of ¾ speed or less speed.
4. As the gripper assembly hits the rubber top cushions it should hit so that the gripper shakes slightly as to loosen any trash stuck in the container.

NOTE: Cushions may differ depending on the weight of the cans being dumped.

Caution! Misadjustments and/or overspeeds of the arm or cradle could cause premature damage and/or warranty disapprovals.

D. To adjust *arm up* cushion (MDM):

1. If not still in the Function Parameters screen then repeat steps B1 through B6.
2. Using the arrow keys on the MDM screen scroll down to find the Arm Up Cushion.
3. Select by pushing **OK**.

4. Adjust parameters by scrolling up or down using the arrow keys.
5. Repeat steps C1 through C4 until a comfortable setting is reached.

NOTE: The higher the percentage the faster the flow and the lower the percentage the slower the flow.

E. To check *arm down* cushion:

1. Move the gripper assembly to the full up position by pushing the joystick in the full back direction.
2. From the full up position move the gripper assembly down by pushing the joystick in the full forward direction.
3. The gripper assembly should start moving at ¾ speed or less and then when the top cushion striker bar is clear the gripper assembly should speed up to full speed.
4. As the gripper assembly moves down it should come down at a speed that the can lid shuts on its way down.

NOTE: This speed may need to differ depending on the size of can being used.

F. To adjust *arm down* cushion (MDM):

1. If not still in the Function Parameters screen then repeat steps B1 through B6.
2. Using the arrow keys on the MDM screen scroll down to find the Arm Dn Cushion.
3. Select by pushing **OK**.
4. Adjust parameters by scrolling up or down using the arrow keys.
5. Repeat steps E1 through E4 until a comfortable setting is reached.

NOTE: The higher the percentage the faster the flow and the lower the percentage the slower the flow.

Arm Maintenance

The Alley-Gator Zero Radius arm must be inspected weekly for arm sway (forward/rearward rocking of the arm mast), wearing of the arm slide tube and rollers, condition and adjustment of the arm stop bumper pads, and structural integrity.

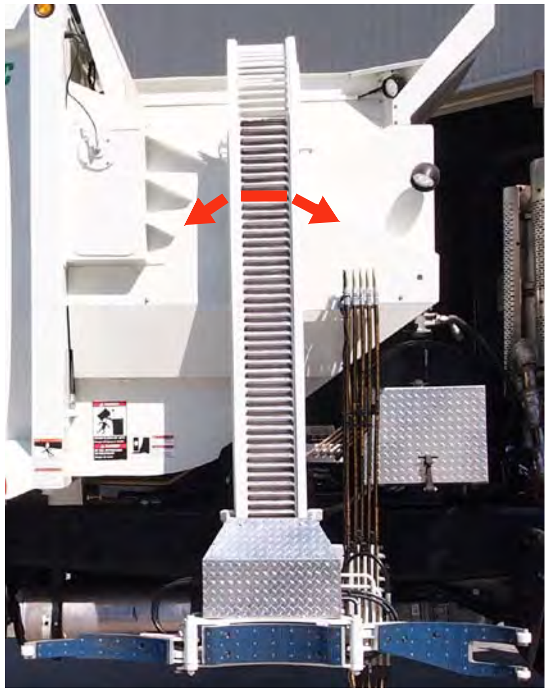
Danger! Be careful when operating the arm. Make sure that there is no one in the path of the arm before extending it.

NOTE: This inspection should be done every week to make sure the arm is working properly.

The following items are to be checked during the weekly inspection:

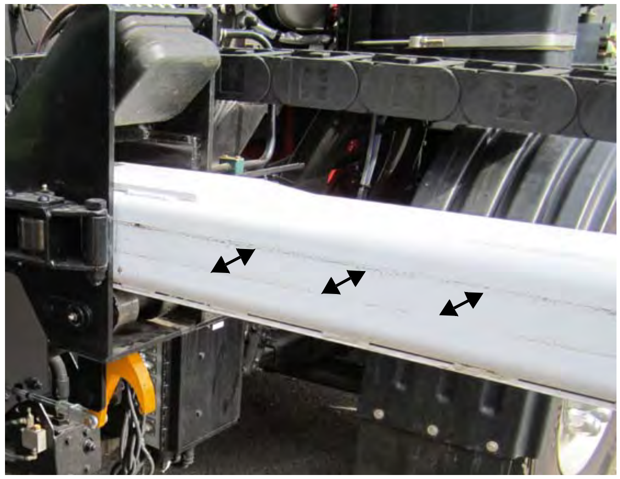
Arm Sway

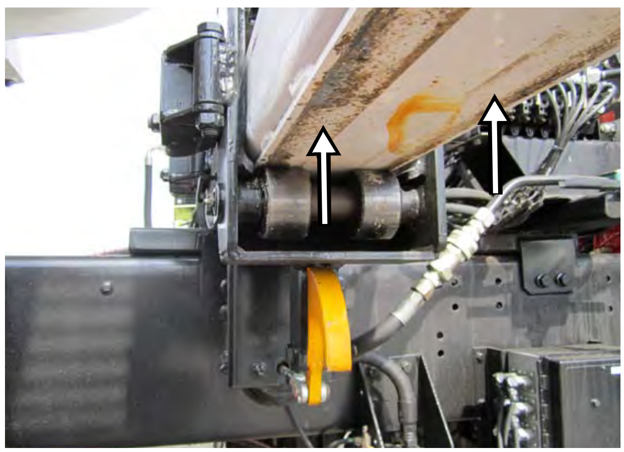
With the arm out one to two inches (1" – 2") from the home (parked) position, check for sway by pushing the arm mast forward and rearward. If the arm sways more than one-half inch (1/2") in either direction at the upper arm bumper stop, the slide rollers must be adjusted – refer to the adjustment procedure on page 115.



Arm Slide Tube

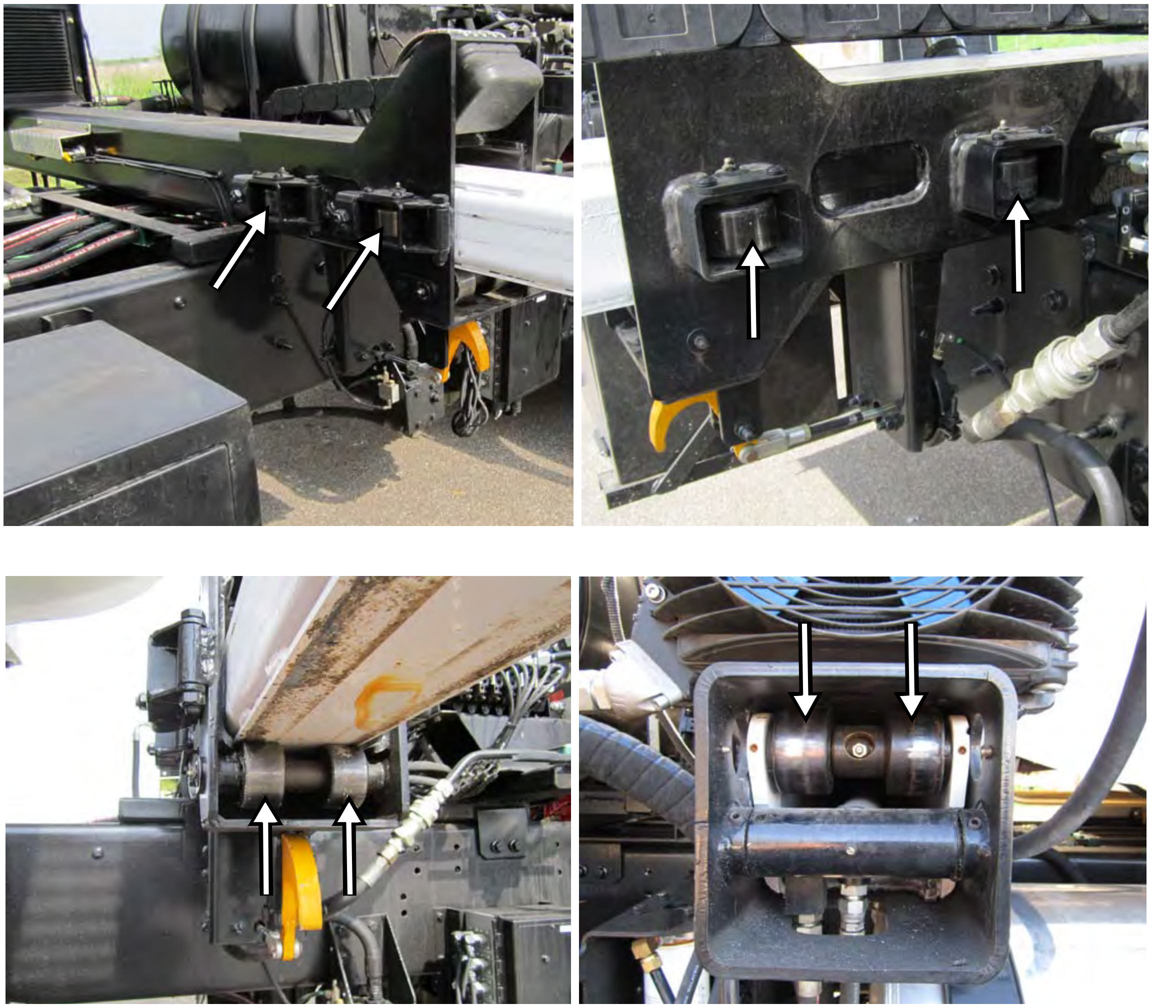
Extend the arm fully, then clean and inspect the arm tube sides and bottom. The roller tracking areas must be free of dirt, grease and oil, and the roller tracking area must not be worn more than three thirty-seconds of an inch (3/32") at its deepest area. If any area of a roller track on the slide tube sides is worn deeper than three thirty-seconds of an inch (3/32"), the arm slide/mast weldment must be replaced. If any area of a roller track on the slide tube bottom is worn deeper than three thirty-seconds of an inch (3/32"), the roller wear plate must be replaced.





Slide Rollers

Fully clean and inspect the outer face of all 8 rollers. Check the complete roller face by placing the arm slide in multiple positions; they must be free of dirt, grease and oil, with no cracks or flat spots evident. The roller must turn without any wobble or binding during arm travel. Replace any roller exhibiting wear or damage. Lubricate the rollers, paying particular attention to not over-grease them; grease until lubricant is just visible between the roller case and the inner race.



Arm Stop Bumper Pads

Check both the upper and lower arm stop bumper pads for wear, cracking or damage; replace as necessary. With the arm fully retracted, both arm stop bumper pads must be compressed at least one-quarter inch (1/4"); the pads may be adjusted by shimming.





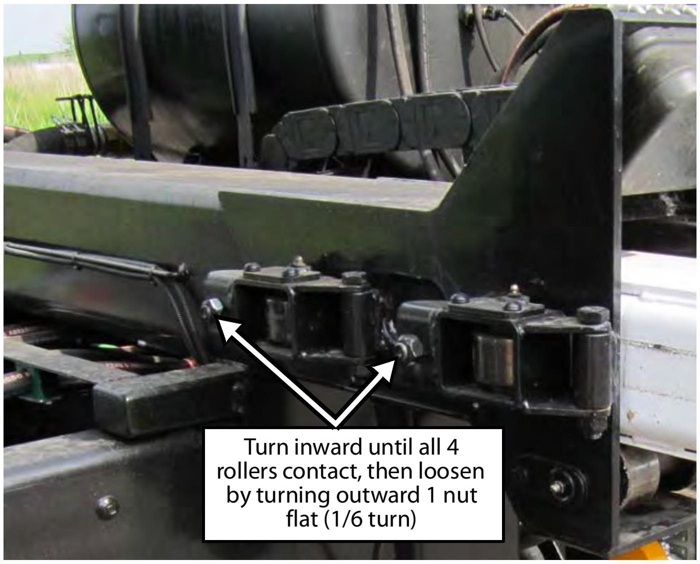
Structural Integrity

Check all metal surfaces and welds on the arm slide/mast weldment for damage or cracking. Also check all metal surfaces and welds on the outer slide tube/base frame weldment; repair as necessary. Check the fasteners that secure the outer slide tube/base weldment to the chassis frame; ensure that they are in place and tightened to 375 lb-ft.

Side Roller Adjustment Procedure

To adjust the arm side rollers, proceed this way:

1. Retract the arm fully, turn OFF the engine and perform the lockout/tagout procedure (see *Lockout/Tagout Procedure* on page 21).
2. Turn the roller adjustment nuts inward (clockwise) until all four (4) side rollers contact the forward and rearward arm slide tube sides.
3. Loosen the adjustment nuts by turning outward (counter-clockwise) one (1) nut flat (1/6 turn).
4. Operate the arm fully out & in several times, and recheck for arm sway.


Turn inward until all 4 rollers contact, then loosen by turning outward 1 nut flat (1/6 turn)

Reward!

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THANKS FOR YOUR HELP!

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